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OCTOBER, 1912

ELECTRICAL MERCHANDISE AND SELLING ELECTRICITY

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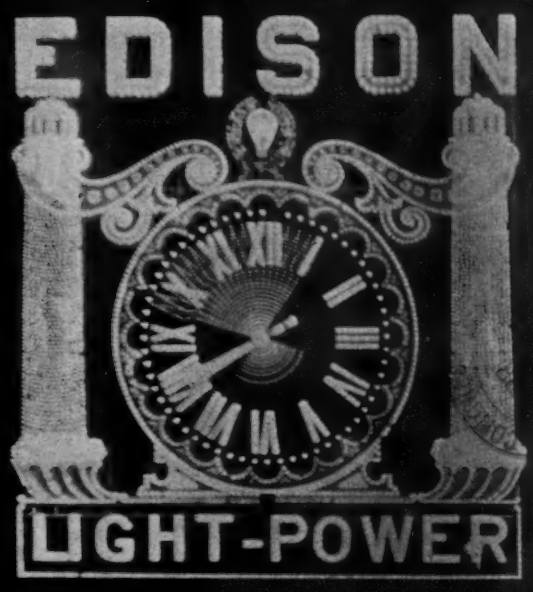
This FEDERAL Sign helped open the Boston Electric Show.



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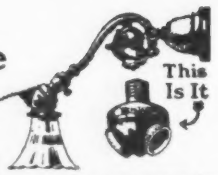
34 feet
diameter
6500 Lamps

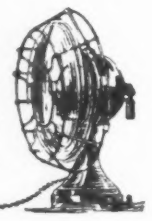
Federal Sign System (Electric)
HOME INSURANCE BUILDING
CHICAGO

At Home
At the Office
In Any Place
of Business



BENJAMIN
PLUG CLUSTER

is a great convenience because it gives you two outlets where you have had but one, doubling the capacity of your sockets by doing the work of two. You may attach any other electrical appliance that you wish and burn your lamp at the same time. It requires no extra wiring—*you simply screw it into the socket.*



For sale by all Electrical Dealers
BENJAMIN ELECTRIC MFG. COMPANY
120-128 So. Sangamon St.
Chicago

Packard
TRANSFORMERS

Have been leaders since pioneer days
and
PACKARD INSULATION

Including Insulating Cloth, Tapes and Varnishes
Explains Why They Lead.
Our circulars give other reasons.

THE PACKARD ELECTRIC CO., 342 Dana Ave., Warren, Ohio

It takes three things to make a lamp sell—year after year—to the same buyers:

1. *A perfect lamp*
2. *Salesmanship*
3. *Service*

That's what has built up the demand for

Sterling Lamps

That's why our distributors are making money.

We want YOU to sell STERLING LAMPS. We have a plan that practically guarantees a profitable business from the start. We want to tell you about it—who's doing it—and how. Write us today.

Sterling Electric Lamp Works
of
General Electric Company
Warren, Ohio

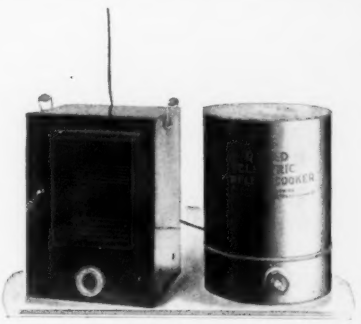
"American Beauty"
Electric Iron

The Best By Ironing-Board Test

GUARANTEED FOR ALL TIME

American Electrical Heater Company
1335 WOODWARD AVE.
DETROIT MICHIGAN, U.S.A.
OLDEST AND LARGEST MAKERS

AMERICAN ELECTRIC HEAT



No more servant problem
No more kitchen drudgery

For women who use the

QUAD ELECTRIC STOVE AND FIRELESS COOKER

BOILS, BAKES, FRIES, ROASTS OR STEWS

AND PAYS FOR ITSELF IN MONEY SAVED!

MADE BY
THE A. L. SYKES MFG. CO.
CINCINNATI, O., U. S. A.
GET OUR CIRCULAR AND SALES PLAN.

Send in Your Dollar Ideas!

1912

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O.

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ELECTRICAL MERCHANDISE
and SELLING ELECTRICITY

VOLUME XI OCTOBER, 1912 NUMBER 10

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This shows the Pole and Bracket with

Ornamental Luminous Arc

used at Lockport, New York, for lighting their business street

The bracket is attached to existing trolley poles without removal of overhead wires. The bracket has a special joint so it is always level no matter at what rake or slant the pole is set. This makes the lighting of your streets a simple matter by using existing trolley poles.

We have a number of other well-designed poles and will be glad to submit designs and prices.

ORNAMENTAL LIGHTING POLE CO.
POLES FOR ALL TYPES OF LIGHTING
• 118 Liberty Street, New York City •

Are You One of the 2,489

Central Stations and Electrical Contractors who are selling

Thor Electric

Home Laundry Machines?

If not, you are limiting your business instead of developing it. THOR dealers secure the orders not only because they offer their customers the best washing and wringing machines made, but because they can give them a selection from 29 sizes and styles at prices from $35 up.

Our Liberal Terms

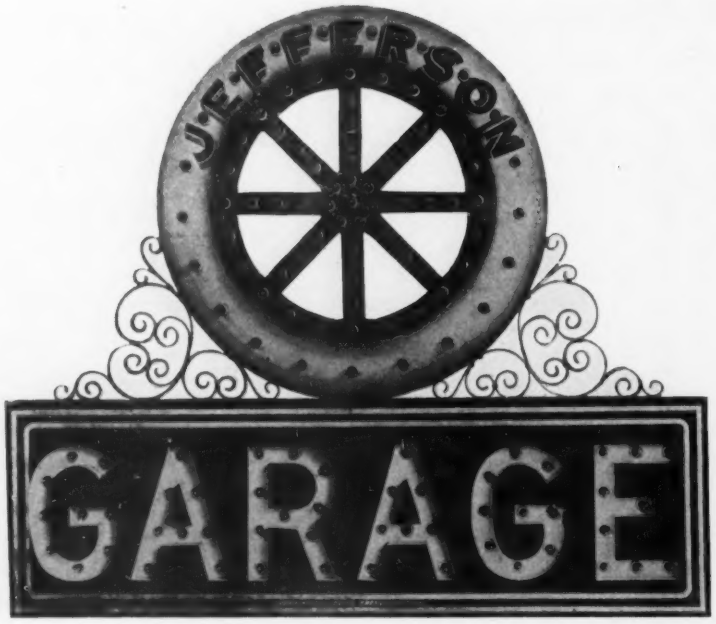
of payment and Free Trial conditions will enable you to develop a permanent and profitable business in these machines during the summer months.

Write for Free Catalog H Today

HURLEY MACHINE COMPANY
25 South Clinton Street, Chicago

NEW YORK
1012 Flatiron Bldg.

LOS ANGELES
3rd and Main Streets



We're building these small signs all the time and every one of them is "different" in the town where its work is to be done. The first thing we consider is where it is going and what kind of signs there are in the neighborhood. We believe that the most important thing in an electric sign is

Individuality

That's what pleases the purchaser. That's what makes him buy. That's what keeps that sign in action year after year. That's what builds up the profitable sign load for the central station. It's the individuality in the sign—the satisfaction of the owner.

"The Greenwoods" build all kinds of signs—big displays for national advertisers—we ship 'em and erect 'em all over the United States—and small signs of every possible description. That's the kind we specialize in. We work with and for the central station.

Your merchants need signs for the Christmas market. We can submit designs that will land them. We can get the signs there on time. Write today.

Greenwood Advertising Company

Knoxville, Tenn.

ELECTRICAL MERCHANDISE AND SELLING ELECTRICITY

Edited by FRANK B. RAE, Jr. EARL E. WHITEHORNE, Managing Editor

A Show That Covers Five States

Boston Electric Show Benefits All New England and Proves Practicability of Sectional Exhibitions

By W. C. Andrews

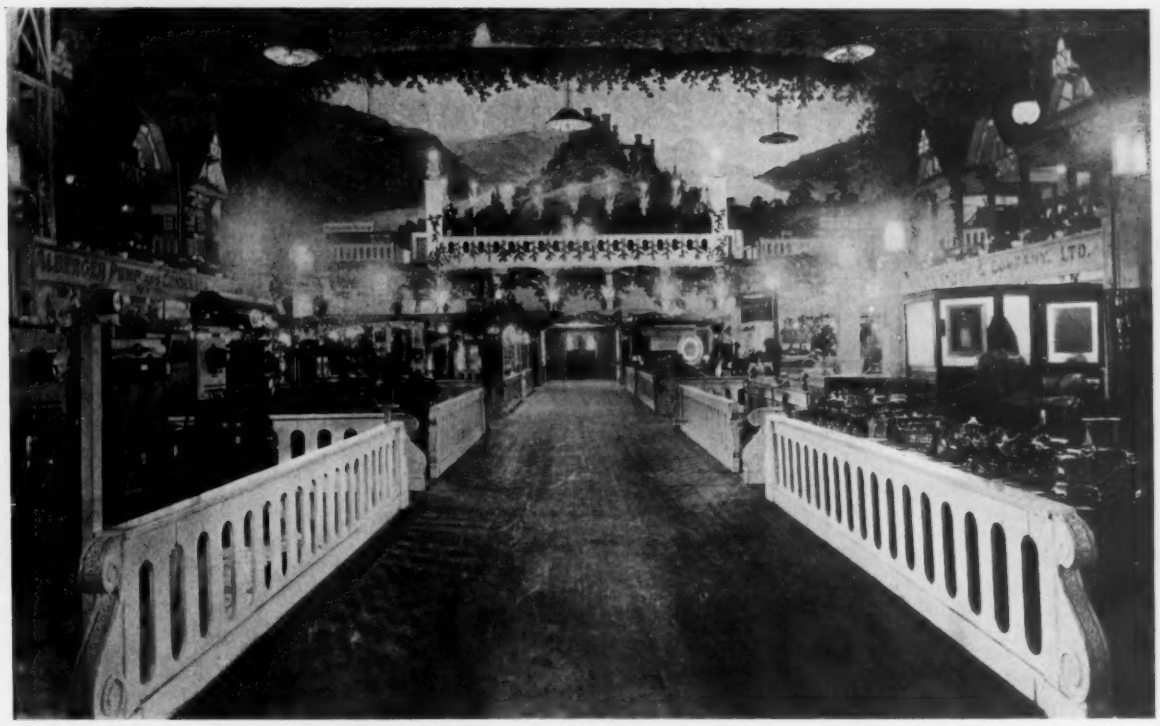
THE electric show is, after all, nothing but an electric show. We've all seen or conducted such shows; we all know how much of work and worry they demand and how valuable they are as popular educators. The difference between one such show and another is mainly a difference in degree.

So it would be easy enough to describe enthusiastically the Boston Electric Show. Without a doubt it is a success—an all-'round, full-measure success that justifies the two years' preparation and the two hundred thousand dollars' investment. But a mere laudatory description designed to tickle the vanity of the Bostonese would be of small benefit to the rest of the industry. When we have said that the Boston Show is the largest electrical trades exposition ever held; that it covers more acreage and contains more individual exhibits embracing a greater number of applications of electricity than any previous show; that it represents a larger investment and is planned to continue open a longer time than any similar popular exposition ever held—when we have said this, we have stated most of the vital facts.

Most, but not all.

For there is one phase of the plan and scope of this show that puts it above and beyond any other in a new way—a way worthy of imitation—and that is the fact that it was not organized as a local institution at all but was designed to influence a whole section. Its benefit to Boston will be great, but this benefit will be very small as compared to the aggregate benefit to the three hundred other New England central stations.

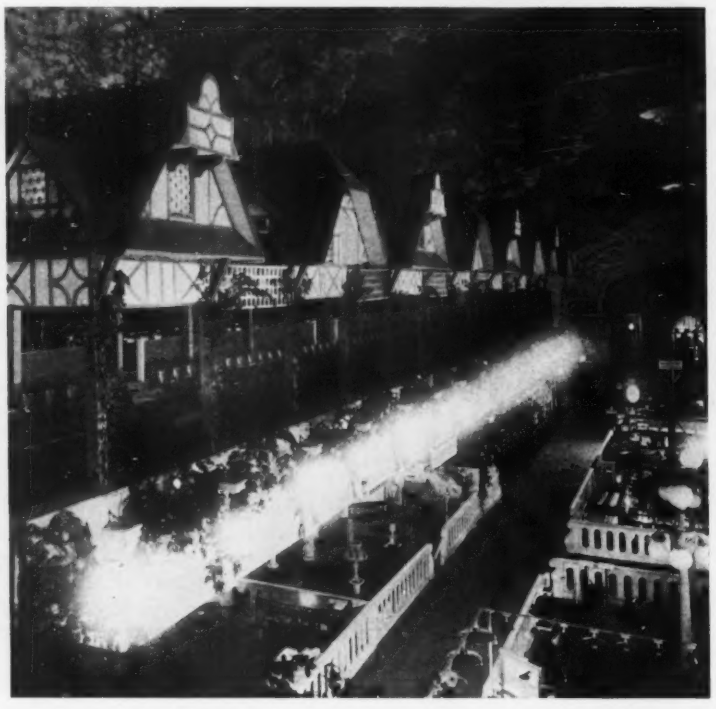
Of course, Boston has certain advantages in promoting such a sectional enterprise. New England folk hang together; to them Boston is indeed the "Hub of the Universe," and it is not difficult to induce them to believe in a well-advertised show conducted by a corporation that covers some seven hundred square miles of their territory with its service and one that has established a name for liberality and enterprise. Still, the point of the most vital importance is that Boston has proven that a show can adequately cover five states. It is another and important demonstration of co-operative effort.



This picture gives a good general idea of the Boston Show—one end of it. There is lots of room and an endless variety of things to see.

The Boston Electric Show did not become a sectional institution without a definite and persistent effort. The voluntary co-operation of surrounding central stations did not at any time seriously embarrass the management. On the contrary, it was not until the investment of the Boston Edison

Company had gone well past the hundred thousand dollar mark that there was any very serious attention paid to it by most of the three hundred central station beneficiaries; indeed, some of them are not awake to the value of the show even yet, although the show itself is now waking them up. Before it is over, it would be surprising if the suggestion does not come from them for



Another corner of the Boston Show. The decorations are most elaborate and effective.

a periodical show in which the entire electrical industry of New England will share both the responsibility and the profit.

Probably the most interesting part of the Boston Show is the way it was and is advertised. For two years a stream of press agent "stuff," display advertising, posters, envelope stuffers, envelope stickers, blotters, and booklets have been circulated to and among electrical men. The local screwdriver electricians and the electrical manufacturers of Japan have both been thoroughly campaigned. This part of the work has been under the direction of Mr. L. D. Gibbs, and if it is not spectacular advertising it has had the very great merit of being effective.

For example, a letter accompanied by an assortment of advertising matter was addressed personally to every electrical contractor, every garage and electric auto agency, and every hotel, restaurant and boarding house in New England. A couple of complimentary tickets were tucked in for emergency. The letter was an honest appeal for New Englanders to spread the news about the show. They did it. Within two days one could not travel six miles in Vermont, New Hampshire, Maine, Rhode Island, or Massachusetts without being told either by word of mouth or by glaring posters that Boston was about to stage the greatest electrical exposition of the century. Nor was this co-operation given entirely by the cheaper hotels; the very best and most famous hostelries of the section were induced to do their part, and they did it gladly and well.

Another and quite different campaign was that carried on among foreign electrical men and interests. Every diplomatic and consular representative of the United States was given full information about the show and each was solicited for the names of manufacturers or others who might be interested. To these the "foreign department" of the show sent complete data and publicity material. Boards of Trade, Chambers of Commerce, and similar bodies in every large city of the world received complete educational material, and this was supplemented by generous display advertising in the leading electrical papers of England, Germany, France, Italy, Austria, and Japan. The object of this campaign was to secure details of every possible device which might prove of interest as an exhibit. The results were surprising. The management received responses from every civilized country, and among the exhibits are many which were secured direct or suggested by the foreign correspondence.

The other phase of the advertising is the spectacular effects surrounding the show itself. As a "leader" to the Mechanics Building in which the exhibit is held, there were erected forty-four poles for display lighting. The line begins at Copley Square with two posts carrying thirteen special flaming arcs and extends a mile down Huntington Avenue. The lamps are trimmed with special carbons so that the general red-and-green color scheme of the show is carried out even in the decorative lighting. On the building itself are 30,000 lamps of different colors used for outlining and for spectacular effects. A huge temporary sign covers the entire back of the building and shines across the railway yard to Boylston Street, upon which is probably the heaviest traffic of any street outside the shopping district. The tower of the Mechanics Building is a mass of flashing lamps, which give it the most remarkable appearance of revolving. To cap the electrical features, the Edison Company erected the largest clock sign in the world at a point which brings it "into the picture" and makes it a dominating feature of the show.

With such advertising, it is small wonder that the attendance for the first three nights was almost 85,000, of which number practically 15,000 paid their admission at the door. The "paper" represents tickets actually purchased by the Boston Edison Company and contingent tickets distributed by exhibitors. There were no free tickets; except those given in exchange for advertising cooperation; somebody paid for every person admitted at the gate.

Of the show itself, little need be said. Every exhibit either represents an electrical interest or is electrically driven. The number of moving exhibits by concerns not associated with the electrical industry is large, and gives the show added interest both to electrical men and to the public. Such firms as Chase & Sanborn, the tea and coffee house, United Shoe Machinery Company, Walter Baker, the chocolate manufacturer, a printer, a couple of candy manufacturers, a dairyman whose establishment and exhibit are both by Edison current—these and many more by their moving exhibits demonstrate the efficiency, flexibility, and cleanliness of motor drive.

The electrical exhibitors are of course well represented. General Electric Company shows two very interesting exhibits,

The Mechanics Building is a blaze of light. This picture, taken from afar, shows the strength of the street lights and outlining.

one of a half-dozen girls making miniature lamps and the other of a number of apprentices carrying on regular shop operations. The automobile manufacturers are there in force, their exhibits being concentrated in a room dubbed "the park" and decorated cleverly to give an out-of-doors effect. Some very beautiful displays of lighting fixtures and glassware give color to the show, and the Edison Company's "farm" with its rural applications of electric service is especially notable and complete. One could

H. M. Moses. The man who has managed the Boston Show

cover many pages thus with comments on the more important exhibits, but to no real effect; an electric show is, after all, nothing but an electric show.

But the Boston Show is doing a great work. It is educating the people of five states instead of the people of a single city. Thousands of New England visitors will come to the city during the month the show is open, and of these a large percentage will consider it an important "point of interest" not to be overlooked. Thousands of others who will not visit Boston have been impressed by the considerable publicity and

L. D. Gibbs. The advertising man whose two years' work has made the show possible

will have a more liberal attitude toward electric service. No show, of course, can be wholly local, but the Boston Show is remarkable for its influence is far-reaching. On this account, if on none other, electrical men should study not only the show itself but the methods employed to make the show the real success it is.

George W. Elliott

Mr. George W. Elliott, of the *Electrical World* has been appointed Master of Transportation of the National Electric Light Association. Mr. Elliott succeeds Mr. Charles H. Hodskinson, of Boston, who has filled the position most successfully for several years.

Dollars and Factors*

An Analysis of the Worth of Central Station New Business

By C. J. Russell

IF we desire to obtain an idea of the progress or present status of an industry or of a commercial undertaking we naturally seek statistics showing:

First: Dollars invested, assets, capital consisting of dollars or their equivalent.

Second: Dollars of annual income, gross earnings or production in goods.

Third: Dollars of annual expenditure, operating and maintenance expenses, purchase of materials and replacement of capital destroyed.

Fourth: Dollars of gain or loss, representing the net results of a year's operation.

Taking a case typical of our manufacturing industries as shown in the census reports recently issued for the year 1909, we find:

First: Capital, $100,000.
Second: Gross earnings, $112,000.
Third: Expenses, $100,134.
Fourth: Apparent net gain, $11,866.

Taking the figures of an electric utility for the same year we find:

First: Capital, $477,422.
Second: Gross earnings, $71,566.
Third: Expenses, $46,144.
Fourth: Apparent net gain, $25,422.

The figures of a retail cash grocery business for the same period were:

First: Capital, $8,000.
Second: Gross earnings, $71,000.
Third: Expenses, $66,000.
Fourth: Apparent net gain, $5,000.

These statistics give us a fair idea of the relative financial importance or rank of the three commercial undertakings. It is the relation of the figures to each other, however, that principally impresses us and is of prime importance. It will be noted that for each dollar of capital, the gross earnings of the manufacturing business have been $1.12, of the electric utility not quite fifteen cents and of the retail grocery $8.87½. In other words the capital of the first has been "turned over" one and one-eighth times in a year, the capital of the electric utility at the rate of once in practically seven years while that of the grocery business has been turned over almost nine times within the year. An examination of the business of the grocery store will show that only a small amount of the total capital exists as fixed investment, the transactions consisting largely of the circulation of capital through the purchase and rapid sale of household commodities. In the manufacturing business we find a larger proportion of fixed to circulating capital but even here the purchase of materials and labor may call for five-sixths of the total expenditures. In the electric utility we find that the ratio of fixed to circulating capital is very high, the figures themselves furnishing a rough indication of this fact.

It will be noticed that the total expenses of the manufacturing business have been 89 per cent of the gross earnings, while in the electric utility they have absorbed 64 per cent of the gross earnings and in the retail grocery they have been 93 per cent of the total income. In order to fix in our minds the importance of the relation of these figures to each other let us assume that a moderate amount of additional gross earnings could be obtained without increased capital and that the ratio of expenses to earnings would remain the same. If a dollar of income were added to the manufacturing business the expense would increase eighty-nine cents and the net returns increase eleven cents. If a dollar of new business were added to the electric utility the expenses would increase sixty-four cents and the net returns thirty-six cents. In the grocery business a dollar of increased gross earnings would cost nearly ninety-three cents in expense and the net returns would show a gain of a little over seven cents.

These figures give us a rough idea of what additional business means and of its special importance and value to the electric utility. They do not, however, do full justice to the value of additional gross earnings in that undertaking, for the reason that the ratio of expense in such additional business will not remain the same. As has been stated before the ratio of fixed to circulating capital is very high in the utility under consideration. Fixed investment leads to fixed charges *per se* but the very nature of all forms of public utilities creates a high ratio of fixed expenses sometimes called "Standby or Readiness-to-Serve" charges as compared with those expenses which vary with the actual production or output. For this reason a very large percentage of additional gross earnings will be found in the apparent net gains and a very large percentage of the dollars deducted from income through lost business will subtract themselves from the net gains.

We may therefore see from a consideration of these figures that the relation of gross earnings to capital and the relation of expenses to gross earnings are important factors in fixing the value of a given undertaking from the investor's standpoint. The accompanying cut, Figure 1, shows in graphic form the exact meaning of these relations.

The diagram is based upon the assumption that 5 per cent interest must be paid upon the capital invested, that annual taxes to 1 per cent of the same amount must be paid and that 3 per cent must be set aside annually for replacement of capital destroyed through depreciation, obsolescence, etc. It is obvious that the percentages mentioned may be changed and that they are merely used to illustrate a principle. The diagram shows that when the annual gross earnings upon $1 of capital are twelve cents, the operating expenses must be kept within 25 per cent of the gross earnings or the payments mentioned cannot be made. When the gross earnings are twenty cents for each dollar of capital the operating expenses may reach 55 per cent of the gross earnings and the payments specified may be made. If the gross earnings equal thirty-six cents for each dollar of capital the expense may be 75 per cent of the earnings, and so on.

A careful examination of this diagram will show that these relations furnish a true index to the present value of any business as an investment. They are particularly valuable in considering the figures of a public utility because the ratio of gross earnings to capital in such undertakings will ordinarily be found between 10 and 35 per cent.

It is also apparent from this diagram that an important factor in the value of an investment may be found in the new business that can be obtained without a proportional increase of capital. It may be of interest,

*Read before The Pennsylvania Electric Association, at its fifth annual convention, held at Bedford Springs Hotel, Bedford Springs, Pa., Sept. 3, 4, 5, 6, 1912

without going into all the points bearing upon this factor in a public utility, such as size and character of population and territory, general business stability and conditions, present sales per capita, etc., to examine with the aid of another diagram the meaning of additional business to net returns when capital need not be increased.

The basis of Figure 2 is the same as of the preceding diagram, namely: that 5 per cent interest, 1 per cent taxes, and 3 per cent capital replacement must be provided for annually. It is further assumed that one-half of the total expense is fixed and one-half variable. The curve shows the percentage of each dollar of additional gross earnings that will appear as apparent net gain at the different ratios of gross earnings to capital

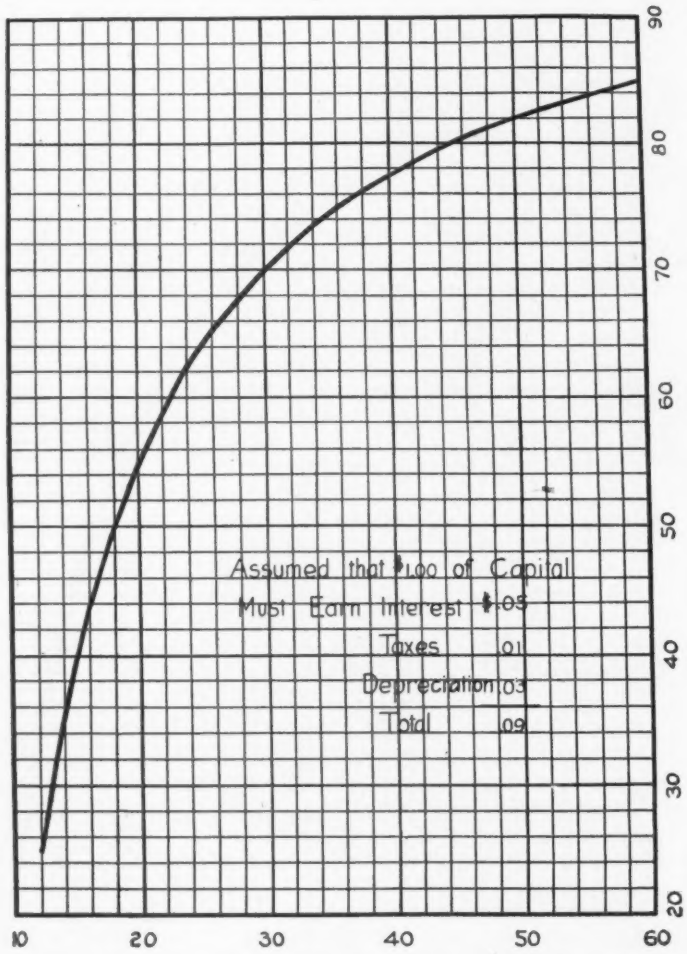


Fig. 1. Highest percentage of gross earnings that may be used for expenses at different ratios of gross earnings to capital. Vertical lines represent cents of gross earnings per dollar of capital. Horizontal lines represent cents of expenses per dollar of gross earnings.

under the conditions assumed. When each dollar of capital is bringing in twelve cents in gross returns (from which amount 5 per cent interest, 1 per cent taxes, and 3 per cent capital replacement are paid), a dollar of new business or additional gross earnings turns eighty-seven and one-half cents over to net gain. When each dollar of capital is bringing in twenty cents gross per year, a dollar of additional earnings will add seventy two and one-half cents to net gains.

This curve illustrates fully the desirability of increasing gross earnings when the ratio of the same to capital is from 12 to 60 per cent. We can readily see that considerable expense for soliciting, advertising, etc., will be justified by the results of such additional revenue.

Increasing Productive Capacity per Dollar of Capital

The improvement of the ratio of revenue to capital is one of the most important matters with which we deal. Dollars of capital represent principally, in our case, productive and distributing facilities. Dollars of revenue come from sales of the commodity we produce and distribute. A dollar of capital represents a certain unit amount of generating and distributing capacity. A dollar of revenue represents a certain number of kw. hours sold. If a dollar of capital represents a capacity of 2 watts placed at the disposal of a customer at the price of ten cents per kw. hour, a ratio of 12 per cent means that we have received payment for the use of that capacity six hundred hours in the year. It is obvious that an improvement in the relation of gross earnings to capital may be made by lowering the amount of capital, increasing the dollars of gross earnings or through a combination of both methods. The first method results in a larger capacity per dollar of capital and is being exemplified all over this country today in the consolidation of supply to communities formerly served by several companies and in the concentration of productive facilities in large generating stations and of distributing facilities in great networks covering many square miles of area. Recognition of the principle involved is back of the present feeling against duplication of investment for the performance of a given service and against the waste of capital brought about by competition where one commercial undertaking can supply the necessary facilities and service. The consolidation of manufacturing plants, the combination of competing companies, the very centralization of population all proceed from this economic cause. Its importance has been set forth in many decisions of Public Service Commissions dealing directly with questions of the public utilities.

It may be said, in fact, that the very existence of a public utility is due to the basic principle here involved. Any person can, by the use of enough capital, have his own gas or electric plant, his own water supply, his own sanitation plant or provide his own transportation. The waste of capital through such investments at a high rate of unit cost on account of the small sized plants, would be tremendous, for the amount of capital tied up in fixed investments would be enormously in excess of that used for the common supply of such utilities.

This is the fundamental principle leading to the existing contracts between electric railways and central stations and between large power users and electric power companies. A dollar of capital buys a larger unit of generating capacity in the central station, has a higher productive value in the railway or factory, and the relation of gross earnings to dollars invested is consequently increased in both.

The rapid development of our own business has resulted in improvement in this relation. We all know that we can add to our plants at a less cost per kw. of capacity than our present average figure for existing plant. Such additions will consequently decrease the average cost per unit of earning capacity and thus increase the ratio of gross earnings to dollars of capital if the new business obtained brings in the same average revenue or more for each dollar invested.

It is hoped that these statements may convey some idea of the importance of increasing the productive capacity represented by a dollar in our public utilities, for this point is fundamental, vital, and economic.

Increasing Gross Earnings

The importance of increasing gross earnings has already been touched upon. It has been shown that the utilization of existing capital to bring in additional dollars of earnings is of supreme importance. In fact, the improvement of the utilization of capital is one of the most serious questions before the business men of the present time. The load factor of a dollar—the ratio of its actual to its maximum productive earnings—is the question we must continually keep before us.

The figures of public utilities show that the ratio of earnings to capital is low in all of them and we know this is due in a great measure to factors over which they have no control. The ratio represents the actual utilization by the public of the resources placed at their service and corresponds to the average demand of those served for the form of service supplied.

Load Factor

In all utilities the question of maximum capacity required in the business is of first consideration, as this must evidently be at least equal to the maximum simultaneous demand for service. This demand, present and estimated, fixes the amount of capacity to be provided and consequently the amount of capital to be invested. In the case of companies selling electric current the ratio of the utilization of this capacity is called load factor and is expressed as a percentage of the maximum possible utilization.

The average load factor of central stations in this country is said to be from 20 to 25 per cent based upon the maximum simultaneous demand. Figures of the average degree of utilization of their plant capacity are not available, but it is safe to assume that the percentage is much lower than that based on demand. From data collected in this and other countries it is doubtful if the average figure would be higher than 15 per cent.

If we undertake to analyze the data obtainable from the experience of others and

from our own past and present figures, we must all admit that the question of improving our load factor is not an easy one to solve. It will take an enormous proportion of long hour business to increase the load factor from 20 to 40 per cent, as can readily be seen by a few figures. In fact, we must double our existing load and the business gained must have a load factor of 60 per cent in order to accomplish such a result. The possibility of securing an amount of business equal to that we now have and which will use the maximum demand over fourteen hours a day is remote in most cases.

Considering the subject of increasing load factor from an elementary point of view, we shall find that it must proceed from stimulating the average demand of present consumers without increasing their maximum demand during peak periods, or from getting new customers whose needs for current will not coincide with the demands of the consumers now supplied.

One of the most important methods of stimulating the demand of existing customers is by calling to their attention every form of current-consuming devices and the introduction of such appliances should be pushed in every possible manner. The sale of heating, ventilating, and small motor appliances to our present customers is a matter of importance secondary only to the obtaining of new business. In fact the sale of such an appliance as an electric iron is as important under ordinary circumstances as the signing up of additional business of half its capacity. Some of these devices use only a small amount of current but we have already seen the effect of every additional dollar gained in gross earnings from existing investment.

Diversity Factor

The second method of increasing load factor conforms to ordinary business practice in other commercial undertakings.

Restricted hour business offers the most obvious method of accomplishing the result. In practice, however, restrictions as to hours of service are undesirable and must be compensated for by a liberal reduction in rates. If business of such character is taken on in large amounts it is possible that the maximum demand might be shifted over and occur within the time when such business is permitted to take current. In fact the author has data of several cases where this has actually occurred and in those cases the restricted hour business is now undesirable and business of the regular kind of service requirements extremely desirable.

The real aim is to improve our diversity factor which is the ratio between the sum of the maximum demands of our consumers and the actual maximum demand made upon our generating station.

If a dollar of capital represents 2 watts of capacity at the premises of a consumer and we can sell this capacity to a cold storage or ice plant from 1 to 5 a. m., and to a factory from 7 a. m. to 6 p. m., with the exception of the noon hour, and to a theater from 7.30 to 11 p. m., it will have been utilized seventeen and one-half hours per day. The diversity factor in such an assumed case will be three and this means, as compared to a unity diversity factor, that the ratio of gross earnings to capital has been multiplied by three, as compared to the average earnings in the three classes of business. In other words the results in earnings are the same with $1 of capital as for $3 of capital with the same average load factor and simultaneous maximum demands.

A little reflection upon this subject will show that diversity factor is of the greatest possible importance to the small company where units of generating and distributing capacity have a high cost. Reference has already been made to the importance of increasing the productive capacity representing a dollar of capital. The improvement of diversity factor accomplishes this result by obtaining the same results with 1 watt of capacity that could be obtained by two or three times that amount if the maximum demands were simultaneous. In other words, a small station with a diversity factor of three is on the level of a large station where the cost per kw. of capacity is one-half of that of the small station but the diversity factor is 1.5.

The obtaining of a diversity factor of twice our present figure may not be practicable in most cases but we must remember that an improvement of even 10 per cent will produce remarkable results and increase the load factor of every dollar of our capital.

Power Factor

In considering the question of increasing the ratio of gross earnings to capital we are confronted in alternating current plants by the problem of power factor. The effect of this factor, if below unity, is to decrease the productive value of a dollar invested in generating and distributing apparatus and facilities to its own figure. A power factor of seventy-five makes the productive value of a dollar of such investment equal to that of seventy-five cents of investment with unity power factor. The other effects of this factor are serious but will not be discussed at this time, as the above statement shows its result upon a dollar of investment and this with a low ratio of gross earnings is a very serious matter.

The correction of low power factors has been given a great deal of attention and many papers and articles have appeared upon the subject. It is obvious that spending money to make the dollar as productive as before—in other words, to raise the power factor back toward unity can never quite accomplish the result. For this reason it is important that this restrictive factor should be given due recognition and carefully watched. It is insidious in its effects and preventive measures must be used in order to check its restrictions upon the earning power of our dollars. Every installation should be given careful consideration and due attention must be paid to the size and character of all kinds of inductive apparatus connected to our lines. Every installation connected which has a high power factor improves and every one with a low power factor detracts from, the average results. For this reason the commercial forces must keep in close touch with the engineering departments in handling installations of inductive apparatus or appliances.

The Ratio of Expenses to Gross Earnings

Leaving out of consideration the question of our operating and distribution efficiencies, there are just two methods of improving the ratio of expenses to gross earnings. One is to improve our load factor which means to improve the average rate at which current is made and distributed. The other is to generate current upon a large scale. Both these methods also accomplish the result of increasing the ratio of gross earnings to dollars of capital. A careful analysis of the expenses in cases where each method has been successful should be made by every person interested in the future of our business for the results are full of interest and furnish food for thought. Figures from plants in this and other countries where a high load factor in moderate sized station has been obtained seem to show that the decrease in cost per unit for operating and maintenance has not been as great as might be anticipated but that the main reduction has occurred through the decrease in fixed charges per unit and that the real benefit in net results has been almost entirely due to the increased amount of gross earnings per dollar of capital.

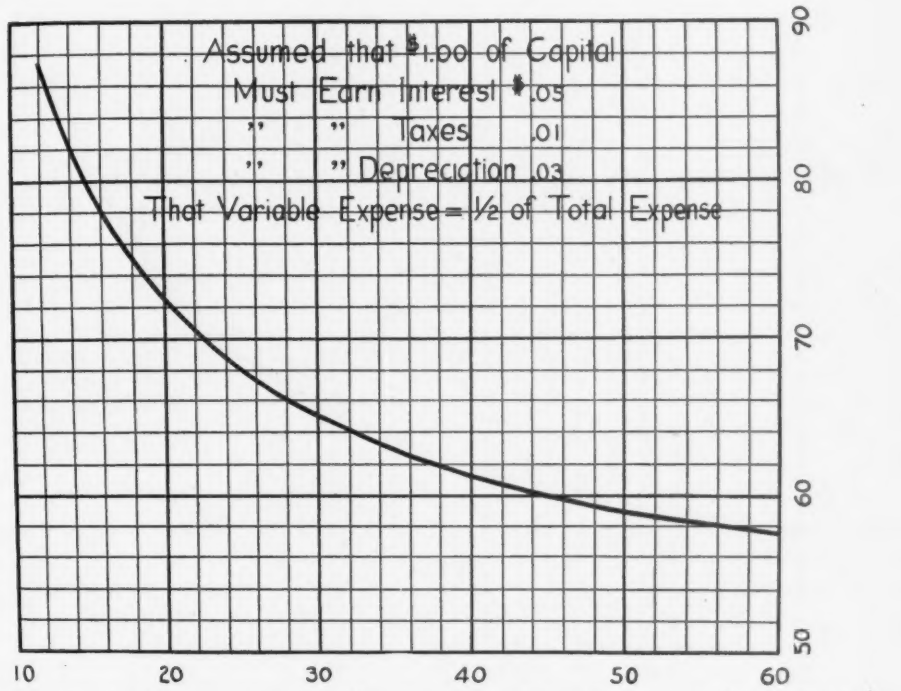


Fig. 2. Percentage of additional gross earnings without increase of capital, applicable to net gain at different ratios of gross earnings to capital, when the expenses are at the maximum permissible percentage of gross earnings shown in Fig. 1. Vertical lines represent cents of gross earnings per dollar of capital. Horizontal lines represent cents applicable to net gains out of each dollar to additional gross earnings. That any decrease in the expense ratio will increase net gain shown in this diagram.

Points of Commercial Importance

While the present paper has been confined principally to the relations of dollars of capital, earnings, and expense in our own industry it is hoped that it will be understood that what has been said will apply to any form of business with equal force. Certain points in this connection are worthy of

consideration, however, as they have an important bearing upon our negotiations for the supply of current as against isolated plants.

The first is, that no man or corporation can afford to invest a dollar of capital in an isolated plant if by investing it in productive business facilities he can materially increase his gross earnings. We all know from experience that the main point in all such cases is to prevent the original installation, for when the investment is once made the capital exists in the plant and must be made productive. When such is not the case, or the plant has reached a stage of obsolescence or inadequacy, the present paper may present some thoughts for a heart-to-heart talk with the investor. If his dollars can be invested so as to increase his gross earnings the curves shown in Figures 1 and 2 represent what results can be accomplished by their use in such a manner instead of in a way which will only increase his ratio of expenses to gross earnings. With increased gross earnings per dollar of capital, dollars of expense become less and less a matter of urgent consideration, and if such a prospective investor can be interested and made to accept the correct perspective our proposition should receive earnest consideration.

Another point is that any ordinary power user can, by increasing his dollars of gross earnings through the advantages offered by central station service, readily obtain results that make his bill for electric current a matter worthy of little thought. Power represents in most manufactured products an extremely small proportion of the total expense. If through obtaining proper speeds and the increased speeds possible by the use of constant periodicity as small a gain in output as 2 per cent can be accomplished, the result in the added proportion of gross earnings to capital will make the power bill a negligible quantity. In one case known to the author of this paper an increase of 16 per cent of output has resulted from adopting central station power and the result in net gains to the manufacturer would have paid a power bill ten times the size of the one rendered. In another an increase of 6 per cent in output resulted. The saving in labor would have paid the bill for current but as that labor could be made productive in other ways it was utilized and in this case the net gains in one year increased slightly over 20 per cent.

Inspiring a City With Self-Confidence

The Story of Galveston and How The Brush Electric Company Helped the Town to "Find Itself"

By Frank B. Rae, Jr.

H, going to Galveston! Nice little town, but it's a 'dead one.' I have a bunch of money tied up in property there and if I could get out with only 25 per cent loss, I'd consider myself lucky. Yes, sir. Galveston has lost its nerve though the folks down there try to bluff it out. They tell you what a wonderful future the city has, but they're all looking for the opening to unload their holdings and get out."

It was a chance acquaintance on the boat from New York to the Gulf City who gave me this encouraging information. He knew the town and its people. He owned property there and paid taxes. He had seen the city come up from the flood and build her great breakwater; he had seen a group of her capitalists erect one of the finest hotels in America; he had seen the Causeway built. But he called it bluff. And he was not the only man in the little island city who felt that way about it. The air, when we landed, carried discouragement. I thought it was the southern languor—a sort of atmospheric hook-worm—but it was very real.

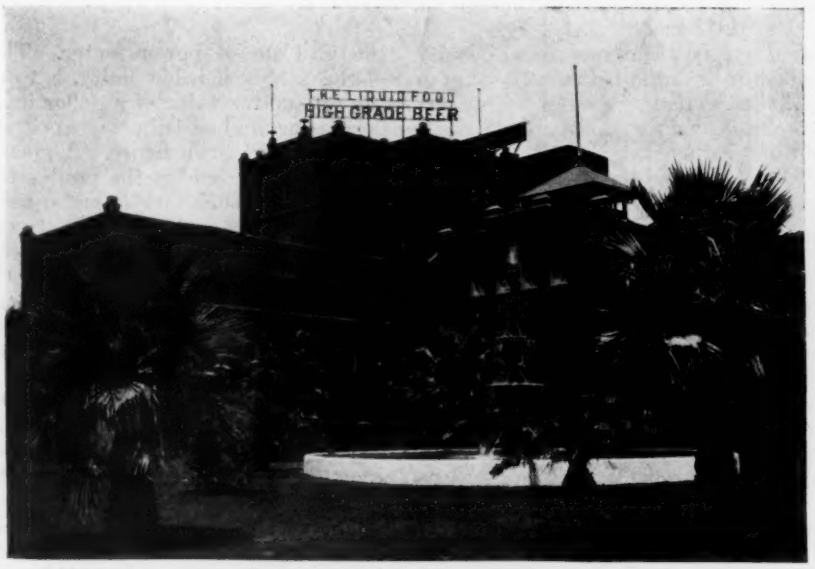
Later I met some of the "real people" and had a chance to see the other side. Galveston held a group of men who believed in the town. They were the leaders in every branch. But it was a mighty small group. Later still I saw what a public utility corporation could do to make the confidence and hope of this small group a reality. The company did not do it alone—probably they could not even have started the enthusiasm without the leaven of confidence and local pride held by the little clique of merchants, bankers, and professional men who were and are the centre of the city's prosperity and hope of growth. But working with these men, this company has done a great work—a work that other corporations may well study and copy.

"I attribute most of our success," said Mr. A. K. Young, Commercial Manager of The Brush Electric Company, "to the remarkable publicity campaign inaugurated by Mr. George Williams. If any one has the slightest doubt as to the value of newspaper publicity founded on broad-minded principles, a little history of this campaign will certainly change their ideas."

The "remarkable publicity campaign" to which Mr. Young refers was in reality nothing but a common-sense application of some of the basic rules of logic. George Williams, while he has been and is, a mighty successful organizer of commercial departments and an all-around high-tension "live wire," has no monopoly of brains or exclusive copyright on methods. The difference as I see it, between Williams and others, is that he does things while the other fellows are consulting around to find out whether they dare do 'em or not. And generally the advisors say No!—not that there is anything to advise against or about, but just on general principles, figuring that if you don't do anything, you aren't liable for doing it.

Well, the "remarkable publicity campaign" was simply this: George went to the manager and the editor of the best paper, and then to the second-best paper, and said, in effect, "Fellows, what'll you have?" This was a natural question in the town that serves the best Bourbon in America. Also, it was a perfectly good way to indicate a friendly, care-free state of mind. Then he told them, candidly, as one human being talking to another—and not as a monopolist trying to "put it over"—just what his people hoped to accomplish for themselves and how this would act and re-act for the good of the community.

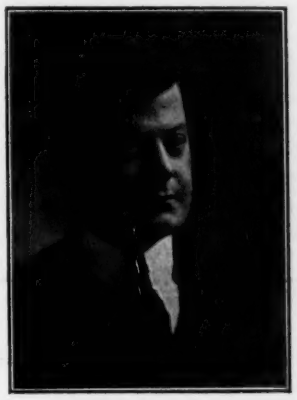
George Williams is honest, and looks the part. He doesn't state everything he believes, but he always and honestly believes what he states. He convinced these newspaper men that he was a plain, straightforward business man; that his people were investing heavily in the community with the rational and commendable expectation of getting a good, fair profit; that they planned and intended to render such service



A characteristic picture from Galveston. The sign on this brewery and the electric fountain in the foreground contain 1,000 5-watt Mazda sign lamps that burn from dusk to midnight every night. The semi-tropical foliage and garden-like care of grounds are one of the charms of "America's Treasure Island."

as to deserve that profit; and that they had sent him down to win the co-operation of the leaders in local affairs by the methods which meant mutual profit and pleasure. This line of talk was so unexpected and unprecedented, coming from a public utility man, that it was received with some hesitation, but Williams went serenely to work to prove that he meant it.

First came a number of good, healthy, man's size newspaper advertisements. These ads took up two or three columns,



George Williams, the "Man Behind" the Galveston Campaign.

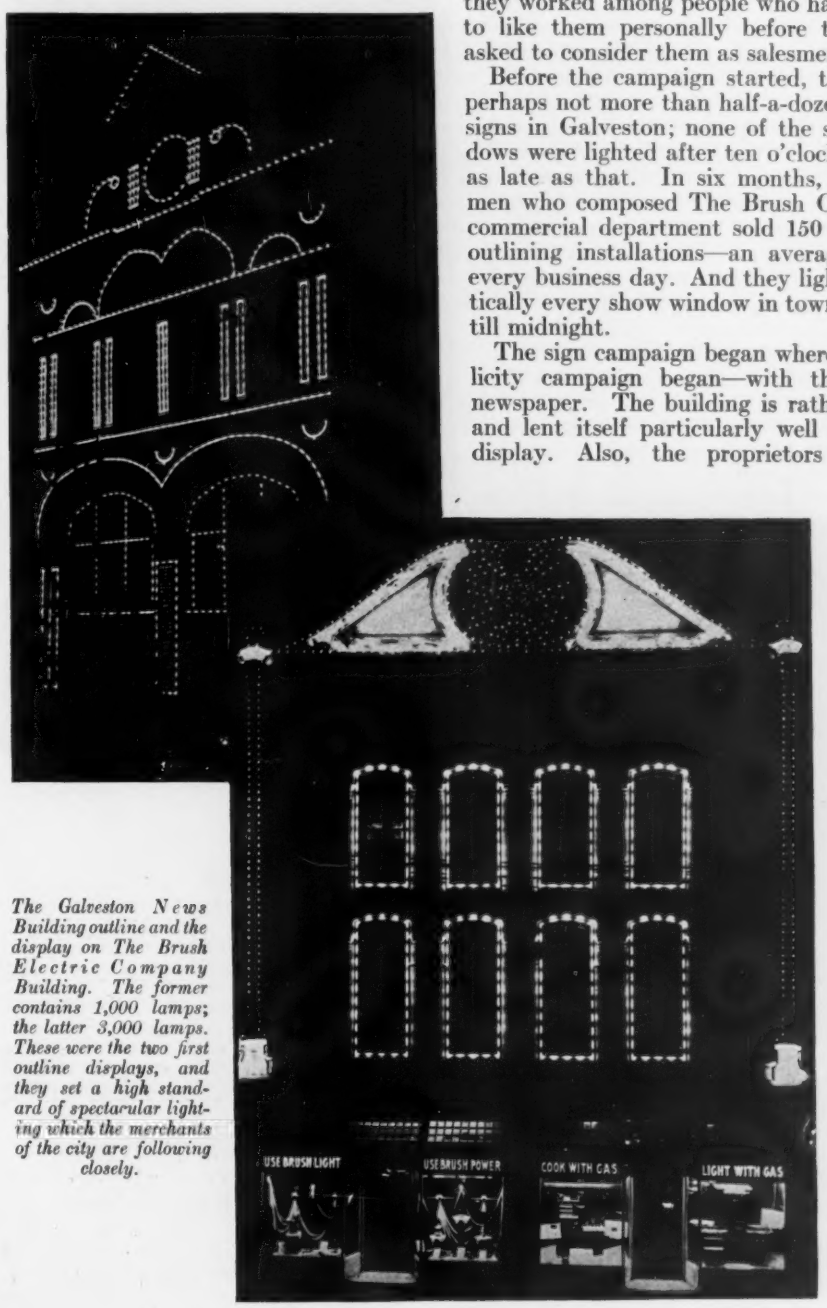
generally. They told the people of Galveston what the Brush Company wanted to do. They talked at length and repeatedly for civic betterment. Clean streets, the removal of packing cases from the sidewalks, more attention to window displays, a movement toward painting all the frame buildings white or light color with the idea of making Galveston known as the "White City of America"—these were some of the subjects of advertising. Of course, their slogan was to make Galveston "the best lighted city in the world," and this was hammered incessantly. They didn't deny a selfish motive, but they did show, and show conclusively, that the betterments and improvement advocated were of general benefit to every citizen. They showed the city its opportunity and they created and fostered both civic pride and local enthusiasm.

The writer of this article, when he arrived at Galveston, was introduced as one who had expert knowledge of lighting conditions throughout the country. "Look this town over," said Williams, "and tell these people how and where better lighting will lead to better business and bigger profits." To one

A. K. Young, Commercial Manager for The Brush Electric Co.

newly arrived, the wonderful walk and boulevard along the sea-wall suggested a marvelous possibility. Here was the raw material of the greatest of ocean resorts—a perfect beach on water so warm as to invite all-year-'round surf bathing, a great promenade and roadway for miles along the Gulf, an already-famous hotel rivaling the best in the country. It was almost ready-made, a bigger and better Atlantic City. This suggestion to the newspaper men resulted in the publication of an interview that roused enthusiasm, that made the people see a new and larger opportunity for their city as a seaside playground.

Along similar lines, many important city, county, and state officials were invited to make suggestions. Sometimes the ideas were incorporated into advertisements, but sometimes and frequently the reporters



The Galveston News Building outline and the display on The Brush Electric Company Building. The former contains 1,000 lamps; the latter 3,000 lamps. These were the two first outline displays, and they set a high standard of spectacular lighting which the merchants of the city are following closely.

seized such "copy" practically without editorial change, for the news columns, and made Williams prepare other and more "commercial" material for insertion in his paid space.

While this awakening was in process, The Brush Company did no soliciting. The commercial department of the company was carefully organized and its member sent out to make a survey of the territory. They had nothing to sell. They simply made the acquaintance of the city and its people, studied the peculiarities and opportunities the city presented and kept a careful touch upon the public pulse. Also, the company rebuilt its office building along most modern lines, doing away with the disfiguring wooden awning which extends from building front to curb in many southern cities, and installing a modern display room. This deliberation in starting the soliciting work was perhaps the cleverest piece of business indulged in by Mr. Williams. It enabled the sales force to develop an acquaintance upon another basis than that of the man with something to sell; at the same time, it whetted the desire of the boys to get to work until they were as eager as so many hounds in leash. When the word was finally given, they went at their work with an enthusiasm and vim that swept opposition away as a gale sweeps dust, and they worked among people who had learned to like them personally before they were asked to consider them as salesmen.

Before the campaign started, there were perhaps not more than half-a-dozen electric signs in Galveston; none of the show windows were lighted after ten o'clock and few as late as that. In six months, the three men who composed The Brush Company's commercial department sold 150 signs and outlining installations—an average of one every business day. And they lighted practically every show window in town, burning till midnight.

The sign campaign began where the publicity campaign began—with the leading newspaper. The building is rather ornate, and lent itself particularly well to outline display. Also, the proprietors and the paper itself are conservatively progressive, so that the installation not only set a high quality standard, but the leadership of this important newspaper in the adoption of electrical advertising meant much in establishing the dignity of the method of popular appeal. The installation as shown in the picture contains 1,000 5-watt Mazda sign lamps, and since the standard of display lighting in Galveston has been established at a high point, this installation will shortly be increased. The *Galveston News* outline burns every night from dusk to midnight—a schedule that has been pretty well standardized throughout the city for decorative lighting and signs.

Almost immediately, upon the opening

of the campaign, the company called upon Mr. T. E. Valentine for assistance in closing orders and suggesting designs. Valentine's arrival was announced in the papers; he was sought by reporters for interviews; as an expert in the art of electrical advertising, his visit was an event, and the people of Galveston were broad-minded and far-sighted enough to accept him as an expert and not cold-shoulder him as a salesman. This also indicates a phase of George Williams' genius, for it is not every central station man who can so pave the way for a manufacturer. This, I think, is largely because the central station men themselves have too often an erroneous idea of the value of the manufacturer as a co-operator. They remember only that he is a manufacturer—a man with something to sell—whereas his value to the central station and to the community is as a specialist in some branch of central station service. It's a point worth turning over in the mind.

The Brush Company, in this campaign, did not neglect to take its own medicine. Not only were the company offices remodeled and enlarged, but the most elaborate outline design in the city was immediately erected on the company's building. Also a huge slogan sign—the company's gift to the city—was ordered, this sign to contain 5,000 lamps and to bear a slogan chosen by a committee of the local business men's organization from suggestions submitted in a prize competition. This slogan sign is 75 feet high by 30 feet long, and is erected upon a concrete base 30 feet high. It

Pioneer Seawall signs. Galveston offers all-year-round surf bathing on one of the finest beaches in the world. In years to come the Seawall will outshine Atlantic City's Boardwalk.

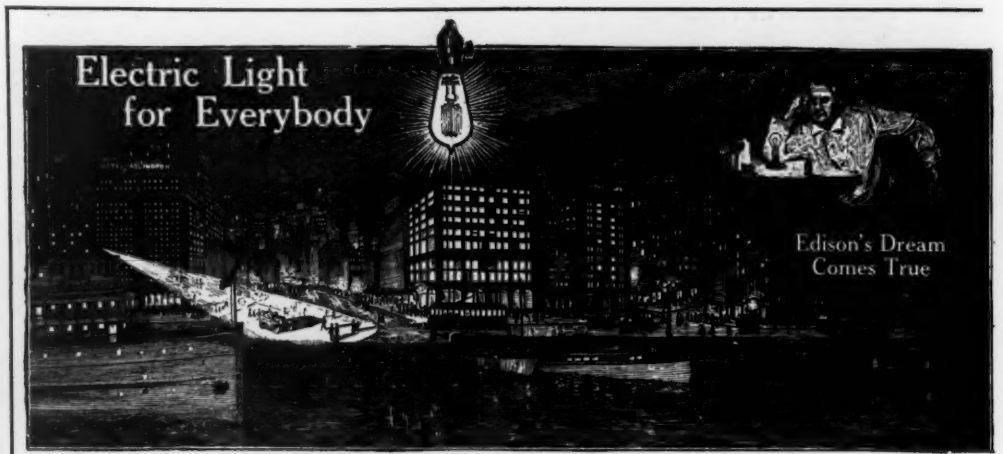
stands upon the beach boulevard at the end of the main thoroughfare to the depot. The slogan reads, "Galveston: the Treasure Island of America," with a secondary changing sign which reads, "Port and Playground: Growing Greater, Grander." The sign has, of course, a moving feature and is worked out in several colors. It burns from dusk till midnight, and the first cost, erection and maintenance are taken care of by The Brush Company.

This is only one of a goodly number of signs on the Seawall, and it is gratifying to the writer to see how quickly and truly his prediction of the value of the beach and boulevard has been realized. Not only are there local signs of bathing houses, restaurants, etc., along the beach, but a number of national advertisers have become interested so that today the Seawall of Galveston begins actually to rival in interest and brilliance the Boardwalk of Atlantic City.

An interesting feature of the signs erected in Galveston and a point made much of by Mr. Young, who has had active charge of the soliciting campaign, is the variety and individuality of the signs. A bicycle with spinning wheels advertises the dealer in bicycles and motor cycles; an auto marks the garage; the plumber erects an electric lighted bathtub; the bank has the dropping-dime sign; a ring indicates the jewelry shop. There may be some question in the reader's mind as to whether these pictorial signs represent the best practice in electric advertising, but nobody can convince Mr. Young that any other kind of sign is more effective. Nor can they convince him that a sign without a flashing feature is preferable. Practically every sign in Galveston has such a feature and there can be no doubt about the effect of this constant play of light; even when the streets are practically deserted, it gives one the impression of life and motion. The signs are sold outright. The purchaser also pays for erection, transformers, flashers, and the first installation of lamps.

These 150 signs and outlines represent but a small part of the company's profit in the electrical awakening of Galveston, yet they are, I think, sufficient evidence of the success of Mr. Williams' publicity methods. But there is another side to the proposition. Every one of those signs represents the conversion of one or more of the leading people of the city to the new faith in the future of the city, a new enthusiasm for the town's development, a new determination to "make good" some of the hope that has been engendered and fostered. Where the Seawall was a deserted boulevard, it is now a public playground. Where folk were in the habit of leaving town for important purchases of clothing, jewelry, and the like, they now buy locally. The brilliance and sparkle of electrified Galveston draws more and more people in from the surrounding towns and country, and these people spend money. Winter visitors to the beautiful Hotel Galvez on the Seawall are more numerous because there is "something doing" to amuse them. In short, money is changing hands faster, and with each change it leaves a little more of pleasure and profit than it did before the city "found itself." And that is the secret of any town's success—to have money changing hands, and to bring in more money.

A year ago many Galveston folk—and



Every Way

Not only in homes, stores, offices, churches, theatres, factories and for electric signs and street lighting—but also on ferry boats, trolley cars, railroad trains, automobiles and even on battleships—these are some of the commoner uses of the

Edison Mazda Lamps

For boiler factory or dining room dome, for store window or clothes closet, for pocket flasher or auto lamp—for scores of uses—some of which would surprise you—millions of Edison Mazdas are in use today. There are sizes and styles for every lighting need.

Everywhere

Wherever any electric lamp can be used, the Edison Mazda is the most economical. It gives twice as much light as old style lamps and uses less current besides.

That's why electric light users everywhere are replacing old lamps with Edison Mazdas.

Everybody

That's why electric light today is so cheap. The tiny cottage or small store can now have better electric light than was possible a few years ago for even the mansion or department store.

Ask any lighting company or electrical dealer about the best styles and sizes of Edison Mazda Lamps for your special needs. Inquire today.

This Symbol on all Edison Mazda cartons

General Electric Company

Largest Electrical Manufacturer in the World

The Guarantee of Excellence on Goods Electrical

Sales Offices in all large cities

Lamp Agencies Everywhere

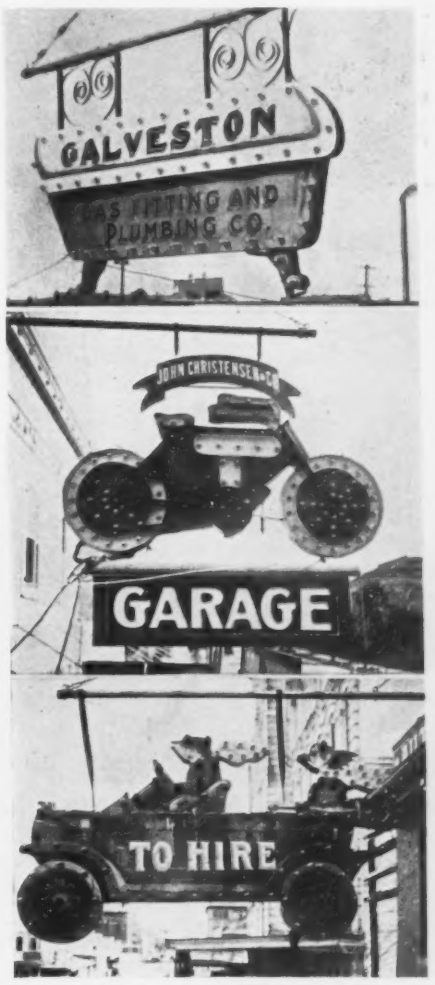
3788

many out of Galveston—felt that the city was doomed to a long period of inaction. For all its brave recovery from the flood that practically wiped it off the map, the city "had the blues." The comparatively small group of brilliant, hardworking, successful men who stemmed this feeling by spending millions for the protective Seawall, the great Causeway, the beautiful hotel, and other features, were making progress but slowly. But with the coming of George Williams with his honest, straightforward appeal to the newspapers and his liberal expenditures for advertising, progress was accelerated. Folk began to "loosen up." The remodeling of the Brush office induced others to remodel—which meant work and profit to building contractors, carpenters, plasterers, decorators. The erection of the great slogan sign induced others to erect signs—which meant work and profit to the contractors, electricians, and the lighting company. They began to act instead of to hope. Business became brisker. Merchants bought and sold more goods. Folk spruced up. The air became charged with vitality, optimism, success. It was simply a matter of changed mental attitude induced by broad-minded publicity and backed by liberal advertising, but the physical and actual results are astonishing.

There is an odd sidelight to this story. Galveston has two electric light companies and has been for years an example to which advocates of public utility competition have "pointed with pride." But the activities of The Brush Company resulted not from the spur of competition, but from a wise and far-sighted policy of management. Before Henry L. Doherty and Company became the controlling factor in that management, both companies were half dormant. One controlled the street railways; the other controlled indirectly the gas business. There was more or less ill-will, but the competition gave the people of the city no advantage. The newspapers were as ready to hammer one company as the other. The duplicate equipment simply meant that neither had enough business to make real money. The activities we have recorded in Galveston are impelled not by competition, but by aggressiveness in management. And it will always be so.

I have said that other companies could study and copy Williams' methods to advantage. I fear that a good many lighting company men, having read this account, will say, "Well, what are his methods, anyway? He doesn't seem to have done anything so very different." Perhaps not, on the surface. But when you look deeper you see that he personally won the friendship of the newspapers. Newspapers live upon advertising, so he gave it to them in liberal measure. Good newspapers constantly seek to inspire civic pride and to initiate civic progress, so he co-operated with them in securing and publishing news and interviews that made the local populace throw out their several chests, become hopeful and liberal, and fall into line with the spirit of the times. He entertained liberally; he helped everybody who was trying to boost and used the axe on everybody who was inclined to grouch. "This is a great town," he said. "You are a great bunch of people. See the wonderful things you have done! See this great opportunity. Listen to this world-renowned expert while he tells you how to do more!"

Did I hear somebody say, "Bunk!"—no matter. Success is optimism in action. Failure is nothing but pessimism come true. Panics are caused by fold losing their nerve. Booms are founded on nothing more tangible than general hope and belief in self and "the proposition." It's all about seven-eighths mental attitude, and George Williams' "remarkable campaign of publicity" consisted simply in cultivating a popular mental attitude of optimism to take the place of the indifference and grey



Several of the characteristic pictorial signs installed in Galveston, in which the business is indicated by the moving attraction instead of by words.

Edison Lamps

"Electric Light for Everybody"

The national advertising campaign, that began in September in over six million copies of many magazines, will be continued in October in even greater volume.

The "Every Way" advertisement, on the facing page, is the second of the series that will reach again and again the present and prospective users of electric service in the United States.

By popularizing electric service, by creating a widespread demand for more electric light, this advertising will inevitably result in increasing the number of electric light users in every locality.

Local selling campaigns will crystallize into local sales—the demand created by this national advertising.

This advertising will appear in the

Saturday Evening Post	—October 5	McClures	—October
Literary Digest	—October 5	Review of Reviews	—October
Collier's Weekly	—October 5	World's Work	—October
American Magazine	—October	Popular Electricity	—October

and in magazines published as a part of the Sunday supplements of great metropolitan newspapers circulating in large areas of which the following cities are the centers:

Boston	Pittsburgh	Cincinnati	St. Louis
Worcester	Richmond	Columbus	Minneapolis
Providence	Washington	Cleveland	Omaha
Rochester	Memphis	Milwaukee	Kansas City
Buffalo	New Orleans	Detroit	Denver
Philadelphia	Louisville	Chicago	Des Moines
		San Francisco	

General Electric Company

Largest Electrical Manufacturer in the World

Edison Lamp Department: **Harrison, N. J.**

3813

The Guarantee of Excellence on Goods Electrical

Let it Sell "QUALITY LAMPS" for You

With systematic regularity the SATURDAY EVENING POST is talking National Quality Mazda lamps to thousands of present and prospective users of electric light in every city, town and village throughout the United States. Are you prepared to gather in the harvest of lamp sales that is ripening on all sides of you because of this extensive publicity campaign?

The argument for better light through the use of

NATIONAL QUALITY MAZDA LAMPS

is told so forcibly and convincingly that hundreds of people in reach of your store or office will unquestionably want to buy National Quality lamps—those which will triple their illumination without added cost for current. They will want the lamps that save them money, that are strong and that give more abundant, more pleasing light.

But they must know WHERE they can obtain lamps of "National Quality." Capitalize at once this exceptional opportunity to gain new customers—to add to your profits. Make it known through your window displays, your newspaper advertising and by any other method that suggests itself to you, that you carry National Quality Mazda lamps and make your store the headquarters for the distribution of these lamps in your city.

For advertising co-operation that will produce results write to any of the following works which comprise the

NATIONAL QUALITY LAMP DIVISION

OF GENERAL ELECTRIC CO.

Cleveland,
SIXTH CITY.

Banner Electric Works, Youngstown, Ohio
Brilliant Electric Works, Cleveland, Ohio
Bryan-Marsh Electric Works, Central Falls, R. I. Chicago, Ill.
The Buckeye Electric Works, Cleveland, Ohio
Colonial Electric Works, Warren, Ohio
The Columbia Inc. Lamp Works, St. Louis, Mo.
Federal Miniature Lamp Works, Cleveland, Ohio
The Fostoria Inc. Lamp Works, Fostoria, Ohio
General Inc. Lamp Works, Cleveland, Ohio
Munder Electric Works, Central Falls, R. I. Chicago, Ill.
Packard Lamp Works, Warren, Ohio
The Peerless Lamp Works, Warren, Ohio
Shelby Lamp Works, Shelby, Ohio
The Sterling Electric Lamp Works, Warren, Ohio
Sunbeam Inc. Lamp Works, Chicago, Ill. New York City

NATIONAL QUALITY

neutrality and actual pessimism that prevailed generally in Galveston before he went there.

This may be bunk, but it's the stuff that dividends are made of—dividends for the lighting company and dividends for every progressive member of the community which that company serves.

The Co-operation Movement in New England

The Electric Development Association has been found by the electrical interests of New England, to proceed in the upbuilding of more local harmony and co-operation between the central stations, contractors, manufacturers, and jobbers. The Executive and Advisory Boards are made up of the most prominent men of these four branches of the industry. The officers are:

President: Frank S. Price, Pettingell-Andrews Company, Boston.

First Vice President: Alfred J. Hixon, Hixon Electric Company, Boston.

Second Vice President: S. B. Condit, Jr., S. B. Condit, Jr. & Company, Boston.

Secretary: Zenas W. Carter, Boston.

Treasurer: Guilford M. Stuart, Stuart-Howland Company, Boston.

At a meeting of these two Boards, held on October second, a "Declaration of Principles" and a "Statement of Policies" were drawn up and adopted. It is a plain, straightforward statement of present conditions and future opportunities that is evidence of the comprehension of this movement. That they are going straight to the heart of the matter is shown in the following extracts from this "Statement of Policies."

Where the central station sells or distributes supplies or current-consuming devices, or handles installation work, it should be on a basis of direct profit on the specific business done.

The central station should carry on active campaigns in general advertising for the instruction of the general public, both individually and in co-operation with this Association.

The central station should use its influence to strengthen and encourage the dealers and contractors in their territory.

The jobber should use every just and legitimate means to encourage the upbuilding of both large and small contractors and dealers.

The jobber should discontinue any form of installation work.

Jobbers should discourage the handling of anything but standard approved material.

Jobbers should actively co-operate with the Association, and with the manufacturers, central stations, and contractors to advertise new goods, and educate the people in the use of present devices, thereby increasing the business.

Contractors should confine their business to the installation of electrical materials and to the retailing of materials and devices.

Contractors and dealers should not attempt wholesaling, but should purchase their materials direct from the jobber.

The contractor should actively co-operate with the jobber and central station and the manufacturer in a concerted effort to educate the public in the use of new and present devices, and in every just and legitimate manner increase the sale of current and current-consuming devices.

The contractor should endeavor to influence owners, engineers ,and architects to install suitable wiring for the accommodation of future extensions for current-consuming devices.

It should be the policy of every contractor to use only approved high grade materials, and to strive to install the same in the very best possible manner.

Each contractor should endeavor to adjust his charges to the consumer, so that they will produce a reasonable profit; quality of material and workmanship to always be the best.

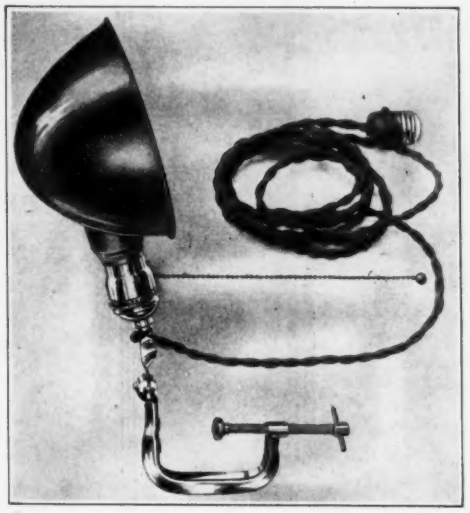
As the prospectus of the new Association states, "There are in Massachusetts alone 483,906 gas meters, while the number of electric meters totals only 106,638. It is fair to assume that no better conditions exist in the remainder of New England. Can we be content while this state of affairs exists?"

There are today in New England 600 salesmen and solicitors selling electrical goods and apparatus. Of these, 100 salesmen are supplied by electrical jobbing houses of New England; and it is a conservative estimate that the electrical contractors in New England have a representative force of 500 solicitors. In addition to this, the central stations probably have between 500 and 600 more solicitors; a tremendous force to be utilized for the common good.

The Association proposes to lay out a sales campaign, by which each branch of the industry may best fit into and supplement the work of the others. It is likewise proposed to weld the whole together by an adequate advertising campaign, embracing the subject of electricity broadly, with its immediate and direct appeal in profits, economy, and comfort to all manufacturers, to the professional and office element, to the retailer and dealer, and to the occupants of New England homes.

An Anywhere Fixture

Of the many designs of portable attachable fixtures for reading or working lamps the accompanying illustration shows the latest and perhaps the most ingenious. It is provided with a screw clamp with an ample spread of jaw adaptable to almost any piece of furniture found in the home or



office. The lamp socket is connected to the clamp by a cleverly made, patented, universal joint consisting of a single flat strip of spring metal with ends bent at right angles and slightly "cupped" at the ends to give a firm hold on their bearing surfaces and keep the lamp at any desired angle without the aid of thumb screws or other adjusting devices. The surfaces of the clamp are padded with pieces of felt so as not to mar the finest furniture.

The fixture may be used on either brass or wooden bedsteads as a reading lamp, may be attached to shaving mirrors or dressing tables, to the back of a Morris chair or the side of a roll top desk. It throws the light just where it is wanted and the high efficiency steel reflector permits the use of small lamps to good effect. A generous length of lamp cord is provided with each fixture and the convenience of the pull socket should not be overlooked in pointing out its merits to a prospective purchaser.

The fixture has been named the "Comfort Lamp" by its manufacturer, John J. Waldman, 136 Liberty Street, New York.

Jovian Jupiter's Endowment Fund

The Past Jupiters' Association, made up of the nine men who have held the chief office in the Jovian Order, is being incorporated and will establish an endowment fund for the purposes of building up the Order, of co-operating with constructive development of the industry, and of improving the paraphernalia, bulletin, and other items which go into the service of Jovianism.

The plan embraces the investment of a fund consisting of the membership dues of the Past Jupiters, a bequest by one Past Jupiter, 1 1-2 per cent of the income of the Order and voluntary subscription by individual Jovians. This fund will be invested in electrical securities and will be allowed to accumulate for a period of 10 years, withdrawals will be made from the income only, the withdrawals beginning in 1922, when 10 per cent of the income will be available; the rate of withdrawal increasing 10 per cent every 10 years. Some interesting figures are shown by the Past Jupiters as to the amount of this fund if it is continued and earns an income of 6 per cent per annum regularly. Starting with the minimum of $2,400, now in the fund, it increases to $12,000 in 1922, to $26,300 in 1932, to almost $50,000 in 1942, and so on until the Order will have a quarter of a million, approximately, in 1982.

The plan is a far-sighted effort to provide for the performance and independence of the Jovian Order. The results, within the active life of the men now interested in Jovianism, will not be great, but this movement will put the Order upon a new foundation and place it in a new light before the industry and before the world. This, of itself, will probably be enough to commend the plan to all Jovians whose hearts are in the work of the Brotherhood.

Minneapolis' Electrical Growth.

During a recent publicity campaign, in which the Minneapolis General Electric Company endeavored to enlighten the general public as to the company's business policies, the following interesting data was published:

Total number of electricity users January, 1903	3,203
Total number of electricity users January, 1904	3,984
Total number of electricity users January, 1905	4,022
Total number of electricity users January, 1906	4,669
Total number of electricity users January, 1907	5,575
Total number of electricity users January, 1908	6,780
Total number of electricity users January, 1909	8,237
Total number of electricity users January, 1910	10,868
Total number of electricity users January, 1911	14,729
Total number of electricity users January, 1912	16,245

The connected load of Minneapolis has increased 485 per cent in the last ten years, while the population increased only 50 per cent.

The increase of connected load in 1911 alone was nearly as much as the total connected load in 1903.

Date	Connected Load	Increase
January, 1903	13,187 horse power	
January, 1904	14,433 horse power	1,246
January, 1905	16,148 horse power	1,715
January, 1906	18,639 horse power	2,491
January, 1907	22,298 horse power	3,558
January, 1908	28,519 horse power	5,222
January, 1909	34,689 horse power	6,170
January, 1910	40,177 horse power	5,488
January, 1911	49,481 horse power	9,304
January, 1912	62,867 horse power	12,388

A Thousand-Dollar Idea for the Display Room

YOU know Bill Donkin? It's his idea. He got tired of having people look at him as if they wanted to call him a liar when he said "Costs only ½ cent an hour." So he figured out a meter to answer that universal question—"How much does it cost to operate?"

People don't call the meter a liar and Bill finds it much easier to make sales. He says the Cent-Hour Meter is as necessary in selling electrical devices as scales in selling meat.

When the customer asks the question, the sure and convincing way to answer it, is to say, "I'll just connect it to the Donkin Cent-Hour Meter and get the exact figure." You plug it in while you are saying it. The customer sees the figures with his own eyes, and there is no disputing it.

The Cent-Hour Meter establishes confidence and clinches sales. It is just a matter of human nature. Try it yourself.

The Cent-Hour Meter is first a meter of the highest quality, guaranteed for accuracy; second, it is a handsomely finished device that will always attract attention, whether out on the floor or in the window.

That's a feature not to be overlooked. People will wonder what it is. Every time you explain it you take advantage of the opportunity to show the small cost of electric current for some device.

Your Cent-Hour Meter will be the best feature of your display room.

Send for circular.

Harbrook Service Co.
Westinghouse Building
Pittsburgh, Penn.

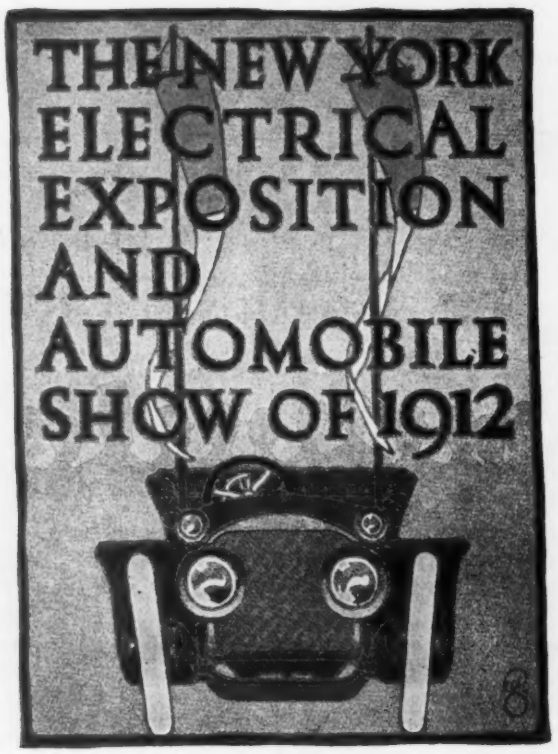
The
New York
Electrical Exposition
and
Automobile Show
of 1912 • In the New
Grand Central Palace
October 9th to 19th

Celebrating
Thirty Years of
Edison Service
in New York

Come see

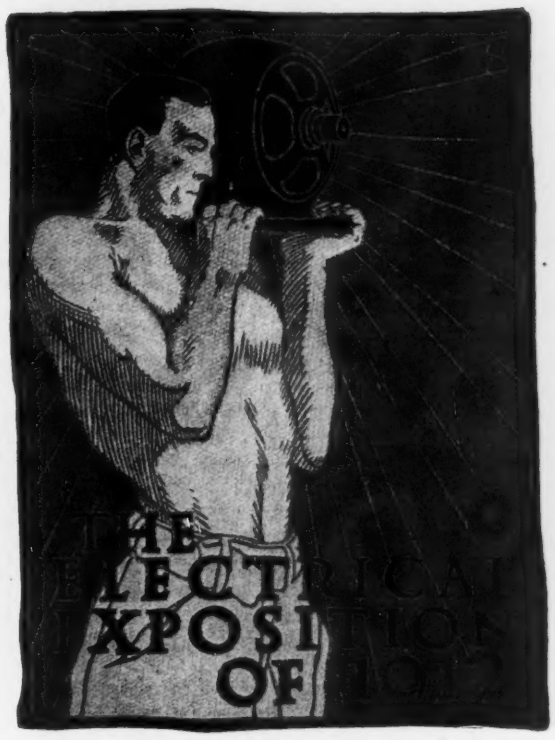
the many practical uses of Edison Service for home and business at The New York Electrical Exposition and Automobile Show of 1912 - in the New Grand Central Palace - Lexington Ave. and 46th St., October ninth to nineteenth

The New York Edison Company



At this exposition will be shown in practical operation various machines and appliances for use in the home, office and factory—all working toward greater comfort, convenience and economy.

The New York Edison Company is and will be always at your service.



This great show is made possible only through the efforts of The New York Edison Company to keep ahead, at all times, in every phase of electrical energy, for light, heat and power.

Today—after thirty years of service.

The New York Edison Company
Always at your service

Advertising Electric Service

A Series of Articles on the Practical Application of Advertising to Selling Electricity and Electrical Merchandise

By Frank B. Rae, Jr.

[The manager of a central station who is not a practical engineer would never think of going out in the power house and connecting up a new switchboard; it looks hard to do. The same man will probably not hesitate a minute when it comes to undertaking the writing of his company's advertising; though he has not had one bit more experience in that than in connecting bus-bars. In this case, however, it looks easy. When you compare the opportunities for waste and loss, writing profitable ads is probably quite the harder of the two.

But because the small company does but little advertising, and because it looks simple and because there is such a limited opportunity for the amateur to discover his shortcomings, we find it the rule rather than the exception, among central stations, for the ad writing to be in the hands of a man who lacks training in the art and has no definite data to guide him. He needs assistance; we are going to give it to him in this series of how-to articles.

There are many little tricks of the trade which the experienced ad-smith employs as a matter of course and the amateur discovers only after long and wasteful blundering; these are the things that Mr. Rae is going to talk about. Read this article and see how. Writing profitable central station advertising requires a combination of talents; but underneath it there are a few "ground rules" which must be obeyed if you are to win the game.—Editor.]

NINETY per cent of the arguments advanced by salesmen could be said better by advertising than by word of mouth. Fifty per cent of the calls made by salesmen could be eliminated by advertising. Twenty-five per cent of the orders taken by salesmen—and credited to personal effort—could be secured as well and more cheaply by advertising.

It depends upon the advertising.

There are, of course, various kinds of advertising—mostly bad. The reason for this is that almost anyone who can hold a pencil thinks he is thereby qualified to write sales literature. This is as obviously absurd as to argue that anyone who can talk is automatically a good salesman, or that anyone who understands the operation of a slide rule is a good engineer.

Advertising is salesmanship-at-large.

Ad-writing, like any other productive labor, requires aptitude and application, both in generous measure, and those who really excel in it are no more common than those who excel in cabinet-making or horse-doctoring or the designing of ladies' hats.

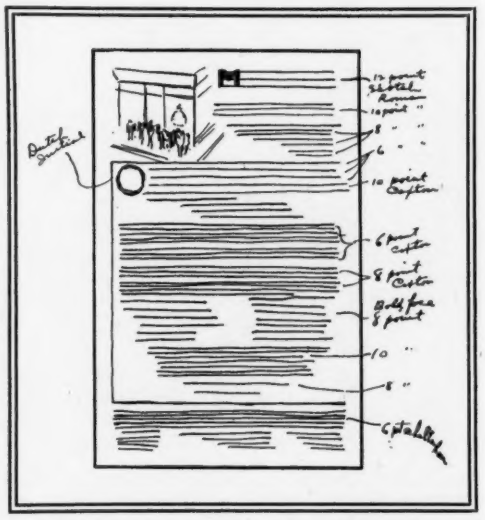
Yet there is no reason why most advertising should be bad—that is to say, ineffective. If the underlying principles are understood and applied with conscious effort most advertising would be good. The trouble is that too much advertising is prepared haphazard, with no conviction of its value and no knowledge of its operation. It is as though a doctor said to himself, "I don't know what's the matter with this patient and I don't believe anything can or ought to be done for him, but we'll shoot a little cyanide into him and see what happens." Such a hesitant, ignorant attitude never brought success in anything. The attitude of success is that dominating yet earnest, that aggressive yet tactful, that honest yet shrewd attitude which we are wont to speak of as "characteristically American." Acquire it in your advertising and your success as an ad-man is certain—your effectiveness assured. You can do it if you will convince yourself that it is worth while—if you will master the principles—if you will honestly work.

* * *

There are three factors in advertising—Mediums, Copy, and Makeup.

The medium is the keynote of each advertisement. Copy and makeup suitable for a billboard or bulletin seldom proves fitting or effective as an envelope enclosure. The copy which would make a strong circular letter cannot be employed *in toto* as a newspaper advertisement. Therefore, in the study of advertising, the first lesson must be an understanding of the purpose and comparative value of various divisions of advertising which we roughly generalize under the heading mediums.

The most important medium for local advertising is the newspaper. Everybody reads newspapers, and the smaller the community the more carefully are they read. While it is undoubtedly a wise "policy" from the central station standpoint to use them, they should not be used with the idea of cheap bribery but rather to demonstrate the spirit of co-operation which should obtain among all local interests working for the common upbuilding of the community. The newspaper is a force for progress and growth. The central station is such a force also. The newspaper can employ central station power and light, can identify and advertise its premises by electric signs and outlining. On the other hand, the central station not only can employ newspaper space to spread abroad the advantages of its service, but it owes the newspaper a certain amount of support in the work of civic development which means inevitably the development of the central station's market and opportunity.



Nobody but a printer knows how to specify type sizes and exact selections. There's bound to be too much or too little type for the space and you can't stretch or squeeze it—it isn't rubber. It worries the printer and spoils the ad by the time you're done.

It is well to acquire and hold this attitude of mutuality in dealing with newspapers. The old-time "public-be-damned" utility operator made no secret of his feeling that money spent with the daily press was a

The Four Kinds of Men Who Write Central Station Ads—And Shouldn't

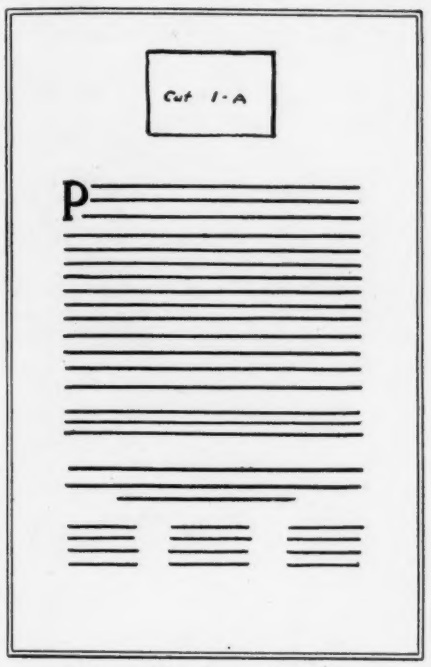
This one writes his ad because it has to be written. He has no idea, no message—just words—and that's about what it sounds like. The space is wasted.

The man who waits till the last minute and then dashes it off, is like the salesman who tries to explain his proposition while he watches for a car.

This man turns it over to a cheap-and-worth-it clerk yet he would never send this 'fellow to see an important customer or let him buy for the firm. What's the difference?

But the worst of all is the man who tries to tell all he knows. The salesman can't do it; neither can the ad for the prospect won't listen. Stick to one idea at a time.

form of hush money. The newspapers, whatever spirit of fairness their owners may have held, accepted the business without thanks and as so much "easy" profit, and lost no chance to prove their independence and gratify their spleen by attacking



This is the kind of a layout that gets results. You indicate exactly the effect you want and you put it strictly up to the printer to make good. If he is a good printer you will get what you want; if he isn't, better find one. But why worry yourself with these technical details?

the utility whenever possible. Both were wrong.

One serious result of this past-and-dead misunderstanding is that a prejudice against newspaper advertising and a disbelief in its efficiency still exists among many central stations. Do not indict the newspaper for this imaginary inefficiency; its value cannot be questioned. Indict rather yourself for having neglected the opportunity which the newspaper undoubtedly offers, or for having accepted it in such half-hearted way that your advertising was doomed before publication to a deserved failure. If you want value from a newspaper, it is up to you to get it. Good advertisers do; poor advertisers do not. Value in advertising depends most upon the man who writes the copy.

The first thing required for a newspaper advertisement is an idea.

Many amateur ad-writers seem to think ideas unnecessary, but experience will convince most men that the ad with the best idea in it will get the most results, other factors being equal. But beware too many ideas. One idea is better than six—in a single ad. The advertisement that rambles is ineffective in the same way as the salesman who rambles. Both lack that quality which we call "punch."

Granting you the idea—which you may never really get—the next point to fix in your own mind is how this ad we are writing is going to look when it's printed. The decent arrangement of an advertisement is as important as decent clothing to a salesman; in fact, we commonly speak of the type display as the "dress" of an ad, meaning thereby the choice of type, proportions, cuts, and general makeup. It's foolish to leave such matters entirely to the newspaper compositor. In the first place, he doesn't care a whoop how your advertisement looks. If he is a skillful workman, he follows the good, old, time-mellowed traditions and gives you a lay-out that looks like every other ad that was ever printed, while if he happens to be an apprentice or a "tramp" you get a display which the country printer terms "something fancy." Both are bad.

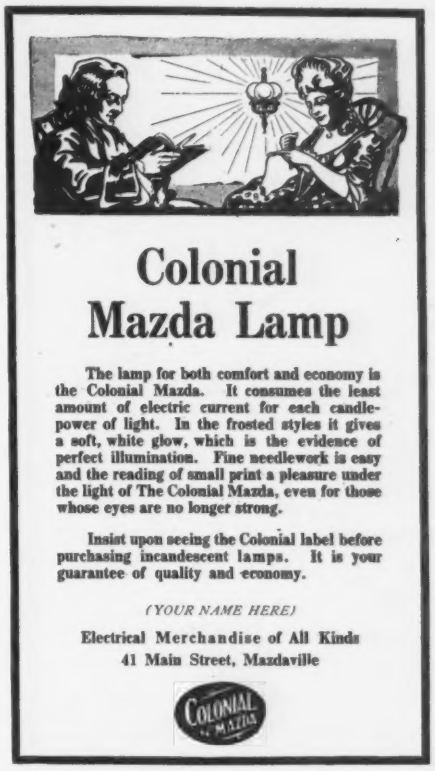
Do not make the alternative error of specifying minutely the size and face of type, the style and width of rule and the exact margins and spacing. Type is made of metal and can neither be expanded or squeezed to any appreciable degree. The amateur ad-writer is much given to detailed instructions, which exasperate the printer because such instructions are seldom practical. The ideal scheme is to make the personal acquaintance of the man at the case (a few cigars will help here) and with him develop a display style that can be employed regularly with slight variations as required by differing copy. A standard style is always to be preferred. The continuous use of one style has a cumulative effect; folk recognize the style and receive an impression even when they do not read the ad. Show me a Rogers, Peet and Company, or a Wanamaker or a Bell Telephone ad and I will identify it every time.

If you use cuts, see that they are printable. To use a 150-line halftone in a newspaper is about as sensible as to use a 220-volt lamp on a 110-volt circuit. Old, worn halftone cuts originally intended for printing on plate paper can't be used in the newspaper with any very gratifying success. To be sure, some newspapers print halftones, but these are made with a coarse screen especially for newspaper printing. You've got to remember that there are a few technicalities to the printing business that can no more be disregarded than can the technicalities of the electrical business.

Some of the best cuts at present available for newspaper advertising are those supplied by the manufacturers—lamp, motor applications, and heating appliances. These cuts may be commonplace to you because you have seen them frequently, but they are new to the public—and it is the public you are trying to reach with your ad. Don't let false pride prevent your using material prepared by experts, even though you don't pay the experts' salaries. Manufacturers' cuts constitute a species of honest graft that will vastly improve your advertising if you'll use them intelligently.

Now, to sum up.

When you sit down to write that next ad, start with an idea. Then figure out how you want that idea to look when it reaches the public. Then see that the cuts you use are suitable and that they will "show up" on the newspaper page.


Colonial
Mazda Lamp
The lamp for both comfort and economy is the Colonial Mazda. It consumes the least amount of electric current for each candle-power of light. In the frosted styles it gives a soft, white glow, which is the evidence of perfect illumination. Fine needlework is easy and the reading of small print a pleasure under the light of The Colonial Mazda, even for those whose eyes are no longer strong.
Insist upon seeing the Colonial label before purchasing incandescent lamps. It is your guarantee of quality and economy.
(YOUR NAME HERE)
Electrical Merchandise of All Kinds
41 Main Street, Mazdaville
COLONIAL MAZDA

This is the kind of an ad that shows up best in the newspaper. The cut stands out clear and strong and the ample white space gives good contrast with the solid reading columns.

Simple?—about as simple as doping out the wiring of a three-way switch or figuring the foot-candles of illumination from a photometric curve. Which is to say that if you put your brain to it you can do it, and if you don't, you can't. The majority of central station commercial men can but don't.

This is what happens when you use a halftone engraving of too fine "screen" for the coarse paper. This is cut from a central station ad and is supposed to show a street lighting scene. What you really get is a smudge.

The Washing Machine Opportunity This Month

If there is ever a particularly favorable season for the featuring of any one current-consuming appliance, it is right now in the case of the washing machine. With the sudden coming of the extremely hot weather the size of the family wash increases and the physical and household distress is a factor to be taken advantage of. Women and children are wearing starched and quick-soiling frocks and underwear, and men are doubling up on the accustomed number of shirts and "athletics" that go into the hamper. It is the profitable time for the central station to work hard for the introduction of the home laundry machine into the many households that are still unaware that it offers them a real economy as well as convenience and comfort.

The question is which washing machine to sell and how to sell it to best advantage. The Federal Sign System (Electric) has recently added to its numerous lines a washing machine for which they claim the following points of superiority:

1. Its symmetrical shape and compactness, occupying little floor space.
2. Its substantial, sanitary and neatly designed construction, easily kept clean and wholesome.
3. Its absolutely protected gears, giving four unobstructed sides to the operator and eliminating all danger of personal injury. Where there are small children in the house, curious to poke fingers into moving machinery, the safety of the Federal mechanism is a most important consideration.
4. It reverses instantly at the pull of the lever. This means absolute control in case of accident. Laces and fringes do not follow the third roller back, injuring the fabric and making it necessary to take apart the wringer to disentangle it.
5. Its quiet operation, due to its lack of complicated gears and parts.
6. Its ability to wash quickly. From five to seven minutes will wash any ordinary laundry absolutely clean.
7. All of these improvements at a cost no greater than other high class machines on the market.

It isn't hard to demonstrate the advantages of the electric washing machine over the old-time method and it isn't hard to prove its comparative economy.

The family washing may be done at home by a servant already employed in the household or by the mistress herself. A short hour in the morning will accomplish the same results hitherto obtained by highly paid servants in a whole day's time. Instead of the back-breaking, knuckle-wearing, wash-board and hand-wringer, behold in the Federal machine two levers, one to start the motor to oscillate the perforated clothes cylinder, the other to start the reversible wringer. Instead of the linen frayed by the weekly wash-board, instead of the laces torn by the manipulation of the hand-wringer, instead of the washing imperfectly done by hand, you have a snowy pile of clothes, beautifully clean and whole, cleanliness without wear and tear to the clothes.

The Federal Electric Washer is square and compact; built of well-seasoned maple and steel lined throughout, with angle iron legs on easy ball-bearing rollers. The inner cylinder, or clothes receptacle, is made of perforated zinc with wooden end walls. It oscillates at the rate of thirty-five times per minute, forcing the water through the perforations in and around the clothes thoroughly.

While the summer is young and the heat is most oppressive take up this washing machine opportunity and build up this profitable off-peak load. The Federal company or any other of the manufacturers are ready to do their part with suggestion and real hard work.

New Publication Plan for N. E. L. A. Proceedings.

The Executive Committee of the National Electric Light Association has recently decided to make an important change in the manner of issuing the bound Proceedings of the Association, and of publishing information which is of immediate importance to the membership at large. Of late years the annual reports have become so bulky it has been unavoidable to print the Proceedings in two or even three thick volumes. The expense of this work and of the advance printing, for the Convention, of papers and reports, has increased so heavily that last year it reached nearly $30,000; and the income of the Association is not equal to the strain. This bulkiness has also made it difficult to get the bound Proceedings out promptly, and the earliest date of issuance now possible is November, or not less than five months after the annual meeting takes place.

There are other objections to the old plan, the chief of which is that with a membership now nearly 13,000, it is wasteful to furnish everyone with all the papers and reports, when some are interested only in the accounting, while others want only the commercial or the technical, and very few want the complete report. Moreover, the space occupied by these accumulating volumes in a bookcase is considerable, while the weight is so great the Association had to spend about $1,500 last year in expressing the books.

Another serious objection to the present plant is that it has stood in the way of building up the monthly *Bulletin*, with the Question Box, now one of the most useful departments of Association work. The Executive Committee is anxious to develop the *Bulletin*, and put into it much matter that has heretofore been held back for the Proceedings. It is now proposed to throw more emphasis, therefore, on the *Bulletin* and to devote to it a portion of the funds previously allotted to the Proceedings.

Under the new plan the Proceedings are being divided into four parts: General and Executive; Technical and Power Transmission; Commercial, and Accounting. Member companies will receive all four parts, and sets will also be furnished complete to company sections. Individuals will be furnished free with the part in which they are directly interested, and if any extra part is required it will be supplied at net cost. In this way it is believed all will be sure to get the material they want, in very handy, compact form, and will not be encumbered with ponderous masses of material, much of which they do not want and will never use.

E. T. Penrose

Mr. E. T. Penrose, formerly general manager of the Penn. Central Light and Power Company, of Altoona, Pa., and who left that position to become electrical engineer of the Pennsylvania Coal and Coke Company, has recently joined the organization of the Electric Bond and Share Company, of New York City.

New Nelite Industrial Reflector

The Nelite "Dome" is the latest metal reflector of the Nelite Works of General Electric Company. As the illustration shows, it is a very shallow type of porcelain enameled steel reflector, designed for service where the so-called flat types have heretofore been employed. Its scientific design,

however, gives the dome type several advantages, chief of which are the minimum glare effect and the desirable distribution of light both of which are secured at no sacrifice of efficiency.

The dome type Holophane-D'Olier reflectors are particularly adapted to service in rooms with low ceilings or where the total area to be lighted is large in comparison with the distance between units.

The Nelite Works has greatly improved its steel department manufacturing facilities and methods, since taking over the Holophane business. Heavier steel is now used in the construction of all the smaller sizes of metal reflectors; a method of galvanizing has been perfected whereby the bodies of aluminized reflectors are rendered impervious to moisture and fumes, and an oxi-acetyline process of welding the holders to the reflector bodies is now employed, which makes the finished units as solid as a single piece of metal.

These developments have been carried on under the direction of Mr. Henry D'Olier, Jr., who promises further improvements in the Nelite lines of metal reflectors within the next few months.

Something Else For The Garage

By G. W. Barlow
Electric Serv. Co., Mattoon, Ill.

Most central station salesmen are familiar with the deadly effect of the dust from various industrial processes when it is steadily breathed into the lungs of workmen. We have all sold different forms of electric exhaust blowers to relieve such conditions. One field, however, which has to date been sadly neglected, is ready at hand in the automobile garages and repair shops, where exhaust gases emitted under certain conditions of incomplete combustion due to improper mixing of gas and air in carburettors, contain a proportion of carbon monixide gas which is very deadly yet so subtle as to be hardly noticed even by an experienced gas worker.

The most effective method is to run a line of pipe similar to a shaving exhaust in a woodworking plant only of smaller size, and at the outlet install an ordinary forge blowing outfit to give velocity to the exhaust when machines are run slowly and to clear the pipe after the machine is away from connection. Ordinarily the momentum given to the gases from the engines will render the current consumption small indeed.

This plan is used in many factories on the test floors but the garages and dealers need some coaching, and as a starter the central station salesman should take it up.

New Inventions

Reported especially for this paper by H. B. Wilson & Co., Patent Attorneys, Washington, D. C. A complete copy of any of these patents will be forwarded to anyone on receipt of ten cents. In ordering copies give number of patent.

1,035,594. Window Reflector. G. B. Johnson, Chicago, Ill.

1,035,596. Electric Furnace. M. J. Johnson, Naugatuck, Conn.

1,035,672. Electrocuting Device for Rats. Albert Ziavin, Shelton, Wash.

1,033,799. Electrical Heater. J. E. Harvey, Milton, Mass.

1,033,867. Electric Heater. A. P. Blenkner and B. Z. Smith, Mountain Home, Idaho.

1,034,151. Combination-Lock for Electric-Lamp Fixtures and the like. G. I. Gilbert, Chicago, Ill. Assignor to Chicago, Ill., Electric Co.

1,034,211. Illuminating Enameled-Metal Barber's Pole. Frank De Palma, New York, N. Y.

1,034,212. Electric Trap. Karby Dewich, Akron, Ohio.

1,034,232. Electrical Alarm. Thomas Erickson, Ogden, Utah.

1,034,251. Electrical Rat Trap. Andy Kita, Epton, Pa.

1,034,261. Audible Signal or Annunciator for Incubators. H. R. Lightcap. Greensburg, Pa.

1,034,290. Method of Electric Welding. H. F. Parish, New York, N. Y. Assignor to Grinden Art Metal Co.

1,034,810. Disk Stove. C. P. Madsen, Chicago, Ill. Assignor to Pelouze Mfg. Co., Chicago, Ill.

1,034,952. Electric Water-Heater. H. P. Ball, Pittsfield, Mass. Assignor to General Electric Co.

1,034,978. Animal Trap. H. W. Christman, Buffalo, N. Y.

1,035,042. Electric Heater. F. C. Perkins, Buffalo, and M. M. Buck, Franklinville, N. Y.; said Perkins assignor to said Buck.

1,034,666. Overflow Alarm. A. G. Weir, Chicago, Ill.

1,034,741. Electric-Light-Cord Adjuster. Theo. Smith, Chicago, Ill. Assignor to Theo. Smith Mfg. Co., Chicago, Ill.

1,033,122. Electrically heated comb. Edward Schwartz, Chicago, Ill. Assignor to Pelouze Mfg. Co., Chicago, Ill.

1,033,286. Electric Dumb-waiter control. Michael Spahn and Isaac Concoff, Portland, Oregon.

1,039,682. Fan Motor Oscillator. C. Aalborg, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Co.

1,039,810. Cut-off for Electric Heating Devices. E. E. Rose, Swissvale, Pa., assignor to Westinghouse Electric & Manufacturing Co.

1,039,828. Electric Illuminated Sign Apparatus. A. O. Siegel, New York, N. Y.

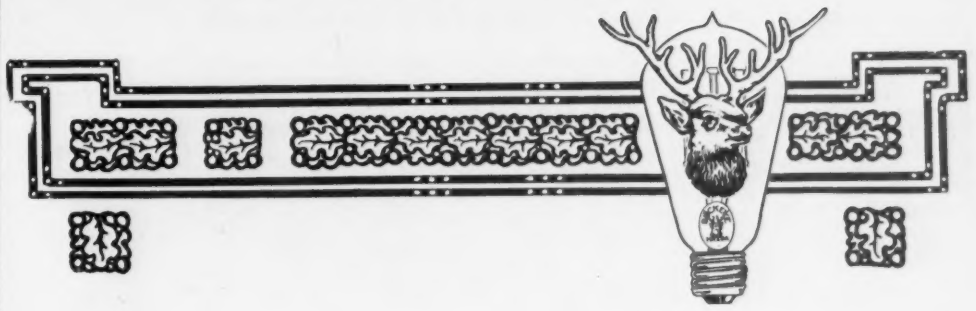
1,039,120. Electric Sad-Iron. L. E. Grubbs, Logansport, Ind.

1,039,135. Process of Electric Welding. A. L. Johnson, Hamburg, N. Y.

1,039,137. Process of Electric Welding. A. L. Johnson, Hamburg, N. Y.

1,039,175. Illuminated sign. Hugh Mulholland, New York, N. Y., assignor to G. M. Potter, New York, N. Y.

1,039,519. Shade Holder. Henry Goodfriend, Yonkers, N. Y.



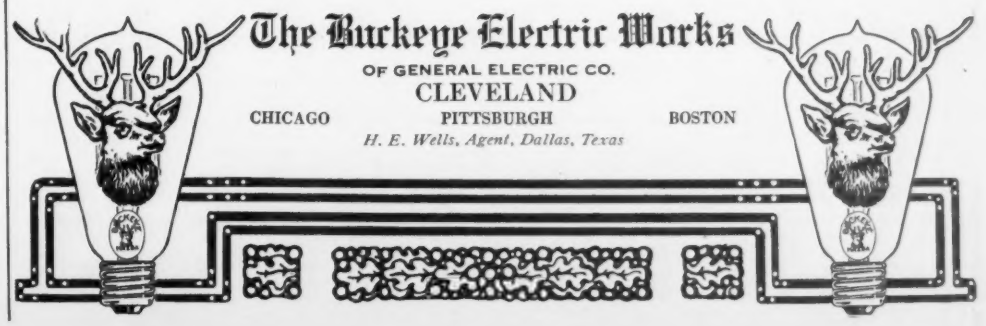
You pay as much for indifferent lamp service as Buckeye customers do for Buckeye Service. You pay as much for indifferent lamps as Buckeye customers pay for

BUCKEYE

"HEAVY DUTY"

LAMPS

You will find satisfaction and real economy in dealing with the Buckeye Works because Buckeye Service eliminates the expense and irritation of delays, errors, squabbles and misunderstanding; and because the quality of Buckeye Lamps protects you against complaints, kicks and come-backs.



Thousands of people this Christmas will select gifts of beautiful, durable, economical

Westinghouse Electric Ware

Hundreds of dealers will profit by its sale.

Prepare now so that you may not miss the customers that our extensive advertising in the Saturday Evening Post and other popular magazines will bring to your store.

Send for our new art catalogue of Westinghouse Electric Ware and check up your stock. You will need a large supply of many pieces this year, especially of the famous little toaster-stove, popular throughout the year and in great demand at the Holiday season.

You should also have a big stock of the "COZY-GLOW" luminous radiator—just new. It's the most artistic radiator ever made, and sells at a popular price.

Many other pieces of Westinghouse Electric Ware will be big sellers this year.

Send for your copy of the art catalogue today, and ask at the same time for sample window display cards and window trims.

Westinghouse Electric and Manufacturing Co.,
East Pittsburgh, Pa.
Sales Offices in 45 American Cities.

Making "George" Do It

By G. S. Emmert

Commercial Department Colorado Springs Light, Heat and Power Co., Colorado Springs, Cole.

As fast as agents come into our office with some good electric selling proposition we promptly collar them, take them out to some reliable dealer here and get him to take the agency. We have done this in a number of instances and the result is a live business, outside of our office, which results in much good to us. We thus get the business without the attending money griefs.

Hair Dryers for Shoe Shines

By Whiting Geer

Lowell Electric Light Corp. Lowell, Mass.

An electric hair dryer adorned our show case for a number of months until someone suggested that a shoe-shine parlor ought to be able to use it for drying tan shoes, where ordinarily they use a palm leaf fan. The dryer was loaned and proved so satisfactory that it was soon sold and another ordered.

An Ozonator Idea

By Whiting Geer

Lowell Electric Light Corp., Lowell, Mass.

Until quite recently we had on hand two ozonators for which there seemed to be small prospect for a sale. It occurred to me to go to two of the largest theatres in town and offer them the use of the ozonators for a short term if they would announce on a moving picture slide that the air in the theatre was purified by an electric ozonator, loaned by us. They were glad of the chance.

As a result we have had several inquiries from the public and soon sold an ozonator to each of the theatres.

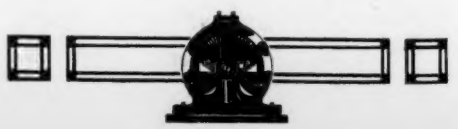
Efficiency or System

In the operation of any undertaking one may attain high efficiencies and know little about costs, or one may know all about costs and practice no efficiencies.

Which quality is more important in running a plant, efficiency or system?—the efficiency of the Scotch, the Quakers, the Yankees and the Swiss, or the system that balances up United States expenditures to a cent and spends in proportion to what it gets four times as much money as the Swiss republic.

Efficiency and System are totally different and efficiency is by far the more important of the two. If I knew that every part of a plant I was managing was being operated at 100 per cent efficiency, detailed costs would be relatively unimportant. To know every cost, yet not know what the efficiency is, whether high or only 50 per cent, is as reckless as to run a steam boiler without safety valve or steam gauge, trusting that it will not blow up.

Efficiency is the relation between *what is* and *what ought to be*. To determine what actual costs are is a clerical task, but this helps very little if we do not know what costs ought to be. Also, even if we are told what costs ought to be, it requires all sorts of skill to attain the ideal.—Harrington Emerson.



ELECTRICAL MERCHANDISE AND SELLING ELECTRICITY

OCTOBER, 1912

THE SELF-STARTER

The whole aim of modern progress is toward making things automatic. Improvement will cease when everything runs itself—not before.

The automatic machine in the factory, the automatic system in the office, the automatic washer and dough-mixer in the home, the automatic drink-shaker in the club—these are steps toward the ideal.

In making the world wag automatically, electricity is the essential factor and electrical men the high-priests of progress. The motor has extracted the drudgery from housework; it has made the white-wings a relic of barbarism; it has made footing a column of figures a matter of pushing buttons and has made honesty a matter of mechanics. It has applied the self-starter principle to automobiles, cash registers, printing presses, and elevators, but—

Electricity has not yet developed a mechanical self-starter that will apply to a man.

Talk to any business man, no matter what his work may be, ask him what he considers the greatest obstacle to his success and his answer is, "Men." He needs men of the self-starting variety, and he can't find them. He wants men who have the happy faculty of coming to him and saying, "Here is this matter of So-and-So. I am going to do this," or, "I have taken this action. Is that all that can be done?" He wants that kind of question instead of the soul-trying monotony of, "What shall I do with this?" He is sick of these men who have to be everlastingly cranked up.

But there is another side to this matter, when you come to think of it, a side that usually escapes these men who cry for the self-starter. There must always be somebody *behind* the automatic machine, just the same as with the other kind, somebody who presses the button that sets the self-starter to work, somebody who keeps his eye out to see that nobody drops a nail in the gears. The difference is that the man behind "the automatic" does less himself and gets more done. He is there at the helm, just the same, but now he applies the impulse where he used to shoulder the load.

Would a self-starter be any good if you didn't press the spot that starts it to work? Would an automatic be worth floor space if you neglected to use it, because you clung to the habit of doing it the old way? There is the barrier that stands between the average employer and his men. There's the fault that dooms many a central station salesman to mediocrity. He has a self-starter ready in his mechanism and waiting but the boss never discovers it.

Has that been so in your case?

The men who make their money easily and with the most enjoyment are the men who never seem to have any work to do; yet are constantly watching and directing, touching the buttons that operate the human self-starter. And the name of the human self-starter is SYSTEM. If you hold to the details of the work your men are called upon to do, you will develop no self-starters. If you will step back and devote yourself to administering the impulse you will probably discover them.

TOO MUCH WORK FROM THE ELECTRIC

A recent article in a Chicago newspaper told the story of a strike of thirty brewery teamsters who refused to take out their employers' teams because six auto trucks had been added to the equipment. The electric vehicle immediately demonstrated its ability to handle the work of two horse-drawn teams and the teamsters struck in consequence. Their union demanded that the work of the motor trucks be restricted to the capacity of a horse unit.

There is humor in this situation at first glance, but it certainly suggests a point of weakness in the present course of commercial central station effort. The successful power salesman of today wins much of his best business through the co-operation of the steam engineer, whose charge he is about to displace. He begins by converting this engineer to a realization of the opportunity that offers. He tells him "the story of the engineer who doesn't lose his job." It can be made just as powerful an argument in the hands of the vehicle salesman.

THE GENTLE ART OF PICKING FLAWS

A few days after our September issue came out, we received this letter from a central station man in a southern city:

'That article of yours, 'Go to Hell Correspondence' is fine business. I want to thank you for using the forms I sent you in forcing home your argument.

"I am glad it all happened, for our friends in the collection department have pleaded guilty to your 'soft impeachment,' seen the error of their ways, and resolved to depart therefrom—I hope.

"The janitor has instructions to go forth with hammer and pliers and remove from a conspicuous place in our 'front office' a nifty little notice which was hitherto presumed to adorn the space on which it stuck, and which read, 'Positively no discount allowed on bills presented for payment after discount date stamped on bill has passed.'

"I sincerely trust that you may find the time and have the inclination to hand out some more good healthy remarks along this same line.

"Yours very truly,"

Within a few days a dozen other letters came, all in like vein. It has been exceedingly gratifying in that it proves our theory that the central station man is eager in his work sufficiently so to grant his own faults and go after them when they are singled out.

With this endorsement, it is our purpose to freely criticise several other weaknesses of the common practice, all similar in that they are the product of oversight rather than neglect or incapacity. We appeal for the co-operation of our readers—What are these common failings to your mind? How have you met them?

The average man works so close to his problem that the keenness of his perception becomes dulled, where the efficacy of his daily methods are concerned. He who can apply a discriminating perspective, can often put his finger on an unfelt canker, and he renders a friendly service, if his criticism is constructive.

Will you respond?

Paul B. Sawyer

Mr. Paul B. Sawyer, formerly manager of the central station properties in Des Moines and Dubuque, Iowa, and now with the Electric Bond and Share Company, has been appointed vice-president and general manager of the Telluride Power Company of Colorado and Utah. He succeeds Mr. L. L. Nunn as general manager.

Your Display Windows—Are They Dead or Alive?

Part 1. The Forlorn and Abandoned Kind

By Earl E. Whitehorne

[When the Pullman porter gently shakes your arm in the early morning and tells you to wake up, there are two things you can do—sit up, stretch, and rub your eyes or drop off to sleep again. In the one case you're up and dressed and ready to hop off when your station comes; in the other, it's a wild scramble and you alight with your collar in your hand, leaving dignity and umbrella behind—or you're carried on. It pays to hearken to the porter. It will pay you to hearken to this article and sit up and rub your eyes. Perhaps the porter is calling the wrong man in your case; perhaps he isn't.

There is no virtue in purely destructive criticism and this article without the Second Part that is to follow would do small benefit. We believe, however, that the conditions exist not by design or intent but through disregard and the neglect that comes from lack of appreciation. We know that the average man prefers to be roused by the porter.—Editor.]

AS a rule the men who run the central station in a community are about as high in their standards of living as the men who keep the stores. As a class they are about as well bred, as well educated, and as decent citizens. Meet the manager of the leading drygoods store and the manager of the central station on the street and the "electric light man" will probably have just as good clothes on, his shoes will have been as recently polished, his hands are as clean, and all in all, he compares favorably.

Walk down the street and look at their two stores—and be shocked.

The leading drygoods store will be in a good building. It will be fronted by interesting, well-kept window displays, neat, clean, and attractive, and inside the arrangement of stock is in harmony with the obvious desire to make a good impression. The home of central station may or may not be in a good building, but whether or no, in four cases out of ten you'll find a dirty, messy, jumble in the window. In the other six cases, the window space will probably be fast asleep.

How can this be so in so many cities?

Why does this man who dresses himself so well care nothing about the impression that his business makes?

If it is worth while keeping his clothes neat, clean, and effective, why doesn't he take the trouble to keep his store clean?

The answer would be hard to believe, if we did not all know it to be so: The average central station manager looks upon these display windows as a confounded nuisance and a burden; therefore he feels no enthusiasm for them, and he throws away his window opportunity.

The words "dirty, messy jumble" sound a bit strong; but it's true. How many central station windows have you seen where the floor covering and draperies are a faded yellow-green, and the dirt lies deep over the array of flatirons and lamps? How often are *your* show windows dusted? How often does the sales manager give them attention? Yet what use has he for the haberdasher's shop where the window is full of a jumble of shirts and collars, dusty, messy, and fly-specked?

Is that where *you* go to buy *your* ties?

It's all a matter of mental slant; this attitude toward the display window. The managers who neglect it are merely forgetting that the window has the same influence on the public at large that the appearance of the individual salesman has on the individual customer. If you want your men to sell the goods, and build up business, you send out the men who can. The problem of the window is identical. Don't look at it as a "window"—something different from the salesmen—it's just another effort to get the *same kind of business* from the *same kind of people!* That means that it is no easier than selling goods by personal interview and it can't be turned over to the office boy.

In the last five years I have probably seen several hundred photographs of central station window displays. I doubt if there have been ten really good ones, in the lot.

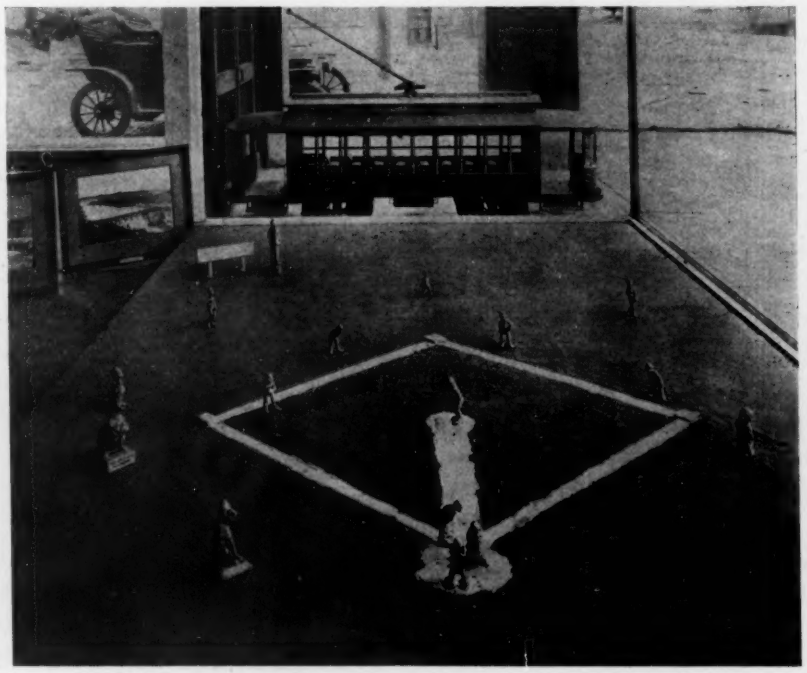
This statement sounds a bit sweeping and ungracious, inasmuch as these photographs have all been sent as examples of good windows, but it is a fact; and the difference in opinion hinges on the difference between a clever, an ingenious window, and a window that is a good, straightforward, consistent salesman. And right there is where the average central station man falls down hard when he undertakes the operation of a sales window. I mean the man who really tries to operate it, not just abandons it to the flies and spiders.

Say what you will about attracting attention, causing talk and all the rest, but you can't sidestep that fact that the way to make money is to sell goods! Odd windows, funny windows, freak windows may draw a crowd, but that is merely a detail, just as the salesman must secure the attention of his prospect before he can make his convincing impression. He can wave a red flag, as he enters the office door, he can turn a handspring or do the start of a song and dance. He'll get the undivided attention of his man without a doubt and he and his company will be talked about, but it won't make a sale. Neither will the window display that merely attracts that eye and has no message behind it. Mere ingenious novelty is no good in a central station window.

Of course, in selling goods by window, like in selling goods by personal call, you can't lay down any hard and fast rule that can be depended upon to work every time. I could outline here the most reasonable theory for window trimming that you ever heard, yet the third man who read it might say, "I've tried it myself, and it won't work. Here's the way to trim a window. I know it because I sold 60 toasters that way last fall." And he'd be entirely right in that particular case, for any one of seventeen different reasons. The fact that it turned the trick this once doesn't prove it good practice, any more than some accident of personal salesmanship might. A clever trick may work once, when conditions are just right, and never again.

There's only one way to go after window business, and that is to take the mental attitude of the trapper. You're setting snares to catch the man and woman on the sidewalk and you need your best wits about you. Say to yourself, "Mrs. Brown is coming down the street tomorrow and will walk by this window. I want to make her look in. When she looks in I want her to see a toaster. When she sees it, I want her to stop and study it. I want her to understand how it works. I want her to compare the electric way with the old skin-blistering and bread-burning method. I want her to *want* one. I want her to want one *now*. I want her to come in and ask about it. If she comes that far I can do the rest."

Then you go to work and make that window call out to Mrs. Brown and the rest



Window No. 1. The clever, ingenious but irrelevant, non-selling window. They require much patient preparation. They cost money. They are well done. BUT THEY DON'T SELL GOODS.

of the world, make it tell her all about the toaster, make it lead her on till you get a chance to sell her personally. That's the way to plan a window.

I could reproduce a hundred of these mis-

Window No. 2. Another window that is noticed and talked about. But the central station is not in the baseball or football business. Make your window help pay dividends.

directed central station window displays. They are of three kinds, the clever, ingenious, but irrelevant, non-selling windows like Windows 1 and 2, reproduced here; the given-away windows, like Window 3; and the overstocked, jumble windows like Window 4. The forlorn and abandoned, dirty windows we will not reproduce, lest you drop a tear and spot the page. We've all seen them. 'Snough. There are just as many and more kinds of good windows, but they are one in their effort to actually make sales. And they do.

Windows 1 and 2 are good examples of the ingenious window. They have required much patient preparation. They have cost money. They are well and cleverly done, yet these companies are neither in the baseball nor the football business. No. 1 Company operates the street railway to the baseball park, but it is doubtful if this window actually influenced anyone to go to the game. Hundreds of people unquestionably stopped before the window, laughed, and passed on. They talked about it later and said it was clever. It was; but if one out of ten of those people had stopped and looked at nursery milk warmers, properly displayed, it would have been better for the central station.

Window 2 was used in a college town at the time of the "Big Game." The manager believes that it popularized the company with the student body. He knows it, because the student band serenaded the office after the game. It is certainly good politics to stand in with the students, but suppose the company had enthusiastically boosted for the home team in some other way, and had utilized the window to advertise the electric shaving mug and the cigar lighter—wouldn't there have been more money in it for the company?

By the same token, isn't it wasteful to give up the window for a week to the exclusive advertising of the local militia or of some fraternal order which may be in convention in the town. It is so often done Window 3 undoubtedly brought forth compliments, but that doesn't pay dividends.

Apply the same principle to your salesmen. You tell them to make friends, to popularize the company at all such times, but you would never think of sending them to work for the militia or the college students for a week, while business waited.

Take the same stand for your window salesman. Because the men draw salaries their time seems more valuable, but remember, it's your location—those windows, in other words—that makes your rent high. When you waste your window opportunity, you are wasting that rent money.

The overstocked jumble window is a pitiful thing! Look at Window 5. Suppose you sent ten men to call on one customer, and they all went at once and then said not a word, or all talked at once about ten different things? There's your jumble window. In No. 5 there are about ten different articles, and because the central station man knew what they all were, he took it for granted that everyone else did, so he just piled them up and said nothing. But when a salesman goes to a customer's house from this office to sell a toaster or a chafing dish, does he find anything to say about it? Has it any good points that can be brought out? Or does he just hold it up and let the prospect imagine the rest?

Why this difference between the personal call and the window-salesman's effort?

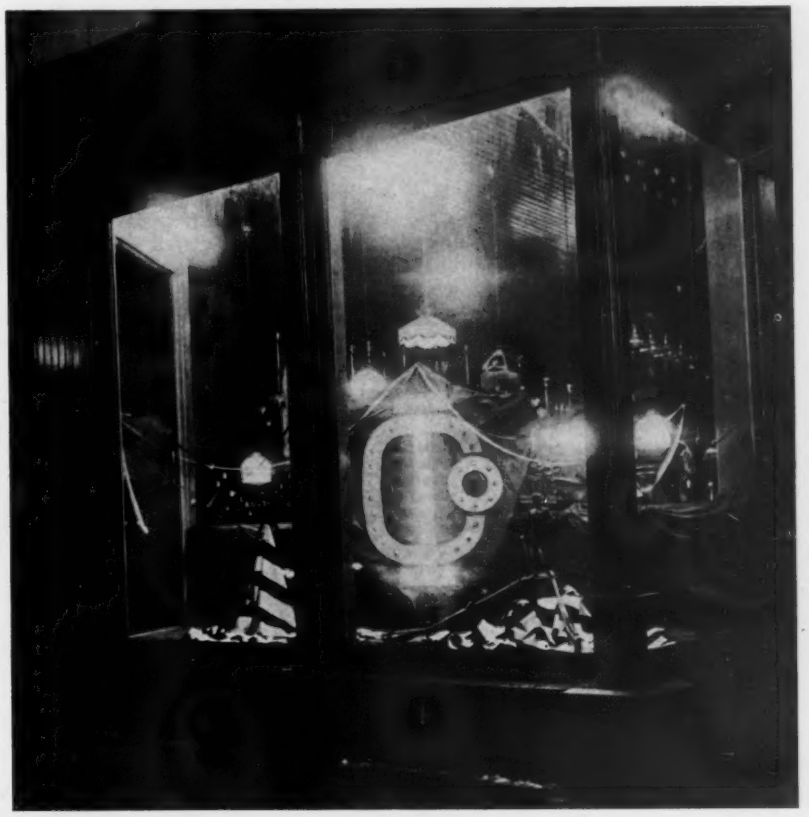
Is the human salesman wrong?

You know he's not.

The reason behind the jumble window is usually something like this:

The manager comes in from lunch and happens to notice that the dust is deep on the sewing machine that has been occupying the stage for the last few weeks, also the manufacturer's poster which stood against it has fallen down and looks dirty and bad. He calls to the first clerk he sees, and says, "Say, Jim, tell George to take that junk out of the window and put in some heating stuff." George gets the message, curses softly, and proceeds to "fill the window."

Now, suppose that manager was going to



Window No. 3. If this window had been a human salesman, would they have sent him out with a gun and a flag, as a compliment to the militia company? What's the difference? Treat your window salesman like a salesman.

hire a new salesman, at a hundred dollars a month, would he let George do it?

a window salesman that is alive and winning, than one that is forlorn and abandoned.

Window No. 4. The overstocked jumble window is a pitiful thing. It pokes ten objects at the public—at once—and then says nothing. The real salesman talks about one thing at a time, and makes you want it. Is he wrong?

What's the difference after all?

Verily, the central station show window has been scorned long enough. If you don't believe it, if you want to test it, send a letter to one hundred lighting companies—any hundred you choose—and ask them what they are doing with their display space. The replies will sadden you.

Yet in every town there are plenty of examples of the skillful use of windows, and you yourself are responding to it every day under the prompting of the department store window and the windows of the jeweler, the grocer, the hardwareman, and the rest. And I can name you several dozen central stations here and there who have awakened to the opportunity and are taking the profits.

Why don't you?

For there is no merchandise more fortunately adapted to window display than that which you sell. It all offers personal service. It is strong in the "human interest" quality. Much of it can be shown in action. It will sell itself, if you will only do your part and give it a chance.

Think this over. Discuss the matter with your salesmen and see if you are getting all you can out of that window of yours. Is it in the right hands?

Next month I'll lay my little hammer away, and show some *real* windows—and why they *are* real. I'll make definite, constructive suggestions for the display of electrical merchandise that will demonstrate how much more profitable, how much pleasanter, how much easier it is to maintain

The New York Electric Show

New York's Annual Electric Show opens this year on October 9th in the Grand Central Palace, and promises to surpass in popular interest and actual educational worth all previous exhibitions that city has seen.

For instance, there is the exhibit of the gardener down on Long Island who by electrifying his irrigation trenches has cultivated with a high degree of profit a farm in a section of land which no other method has shown any possibility of reclaiming. On one side of the exhibit are flowers grown in the ordinary way—watered and tended as the usual garden is. On the other are flowers of the same kind grown by the method which has made the farm of Dr. Emilio Olson, the scientific Long Island horticulturist, produce about 60 per cent better than any of the neighboring places. The contrast in color, size, and freshness is extraordinary. The flowers sprayed with electrified water look like glorified pictures of themselves. And the produce raised by Dr. Olson's methods is correspondingly luxuriant.

In another part of the show the United States Department of the Interior's reclamation work in the Southwest, where deserts are being converted into fruitful farmlands, is illustrated. The Department of Agriculture's experiments with electricity in horticulture are also demonstrated. A greenhouse has been built in one of the big exposition rooms, and here flowers are being stimulated in growth by passing a high tension current through a mesh screen so that it is distributed over them. In contrast with the plants thus treated is a bed growing under normal conditions.

These indicate only some of the larger popular phases of this year's Electrical Show. The general uses of motors and lamps and current directly applied or in storage batteries are shown in a greater variety than ever by an unusually large number of exhibitors.

In the last few years the Electrical Show has developed into the annual automobile show as well, and not only is the display of vehicles, this year, broad enough to cover the field of transportation, completely, but there are several novel features that give an opportunity for a better understanding of electric motor cars than the public has ever before had. Besides the usual kinds of exhibits, cars are to be taken apart and reassembled on the floor of the show, and a ten-lap-to-the-mile track has been built on the top floor of the show for demonstration purposes and for use as a school for owners who want to learn how to drive their own vehicles.

The Electrical Show opens October 9th, with a luncheon in honor of Thomas A. Edison, who celebrates the thirtieth anniversary of his establishment in this city of the first central station in the world for generating and distributing electricity.

A Cent-Hour Meter

A new meter intended for use in the central station display room has been put on the market by the Harbrook Service Company of Pittsburgh. The meter, called the Donkin Cent-Hour Meter, is the invention of Mr. William A. Donkin, contract agent of the Allegheny County Light Company.

Its purpose is to give an authoritative answer to the universal question, "How much does it cost to operate?" When any current-consuming device is connected to the meter, the hand points instantly to the number of cents per hour that it costs to operate. It is especially useful in demonstrating to a customer the cost of current for a device that operates at more than one heat. The meters are callibrated and the reading of the dial is made to correspond to the central station's rate.

The mechanism is similar to that of a regular watt-hour meter. The meter is mounted on a floor pedestal and is provided with a stand to hold the device being measured for current-consumption. It has been shown by actual test that this method of answering the all-important question has more weight with the customer than a verbal answer and that the Cent-Hour meter is an important factor in making sales.

An Electric Sign for Vehicles

A new development in electric sign advertising comes with the equipment of an electric truck belonging to the Philadelphia Truck Company, with a flashing electric sign. For newspaper delivery wagons, department store deliveries, and other cases where the wagons are on the street after dark it seems to offer a novel opportunity for publicity that should be appealing.

In this Philadelphia truck, a Reco flasher, manufactured by the Rhenolds Electric Flasher Manufacturing Company, of Chicago, is installed, out of the way, under the driver's seat, and the sign flashes constantly, as the wagon travels about. The current is supplied from the vehicle battery.

Now's the time to go after

STORE LIGHTING IN AND OUT

That's the title of a new number of ELECTRICAL PROGRESS. It's just ready. It makes a powerful appeal to the merchant at this season when his whole mind is centered on the coming Christmas market. It shows him the business building value of electric light—in his store, in his windows, in his sign. It shows him that he needs all three and why. It's 16 pages of diagrams, pictures and snappy reading. It's full of "kick" and sales-force. Here's a list of contents:

How to Appraise Your Windows

A short article telling the merchant how he can really prove whether his windows are as good as his neighbors. It shows that the principal thing is illumination.

The Window Shopper and the After-Work Market

An interesting story that starts you thinking. Real merchants tell what they think of the sales power of electric advertising. The best kind of arguments for you.

How to Light Your Store
How to Light Your Windows

These two will interest every merchant. They talk in "customer's English" and they boil the whole thing down to sound sense and make the point. Your salesman will be welcome when this is read. He'll want to know more.

Motion—What It Is Worth

A little straight talk on the value of life and action in the sign and the window. How electric service brings you both.

The New-Comer's Trade

Here's the best electric sign talk we know. It's unanswerable and it comes straight from the chest. All your merchants must read it.

Other Jobs for Electricity

A list of the other things electric service brings—the various small power and heating devices that save hours and dollars in different kinds of stores.

ELECTRICAL PROGRESS is a little 6″ × 9″ magazine. It is read as a magazine—not as a circular or Central Station advertising. But that's what it is, for you buy it in quantity and send it to your customers and prospects. It reaches the man and it tells more than three salesman's calls.

Order enough to send a copy to every merchant in your town. A single small order costs 5 cents a copy. Sign a Future Delivery Order for this and other numbers and you get quantity discount on all with a price as low as 2 cents.

If you haven't seen a sample of this STORE LIGHTING NUMBER—drop us a line today. There's money in it for *you*.

THE RAE COMPANY

PUBLISHERS
17 Madison Avenue
NEW YORK

Residence Lighting Number was ready last month and is selling like hot-cross buns.

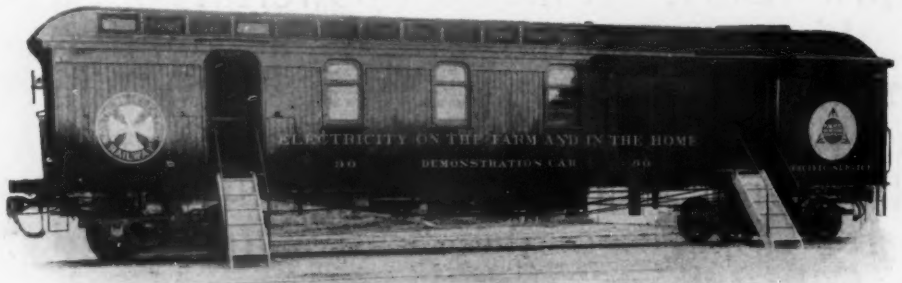
Have you ordered yours?

Electrical Demonstration on Tour*

The Pacific Gas and Electric Company Institutes a Travelling Exhibition of Rural Electric Service—How it Works

By E. A. Weymouth
Commercial Department Pacific Gas and Electric Company, San Francisco

FOR four years the Southern Pacific Railway Company has maintained and operated, entirely at its own expense, a "Special Agricultural and Horticultural Demonstration Train." It is a special train of seven cars designed and stocked by the University of California, with exhibits from the industries of the soil. It travels about through the state of California educating the farmers and stock raisers in the most modern and efficient methods of production, and the most advanced ideas of home economics.



Each year since its organization the enterprise has met an attendance substantially larger than the previous year, and this year the attendance promises to reach 90,000.

This season the train has an additional feature in the way of electrical demonstration which has been made possible by the co-operation of the Pacific Gas and Electric Company. Power wires from the company's plant are brought to within a short distance from the train at each stopping place. A reel of heavy reinforced flexible cord, some 200 feet in length and with a plug cut-out, is carried on the train, so that connection with the power-feeds is the work of but a moment and the train is ready for business almost immediately upon arrival.

This power is utilized to operate numerous model systems of irrigation, and labor saving on the farm.

Also this year the Pacific Gas and Electric Company has itself entered into this field of educational endeavor and in co-operation with the Northern Electric Railroad Company has equipped an electric car and put it out on tour through the agricultural territories covered by the company's lines.

In this car are exhibited the different methods of irrigation and pumping with electric power, the utility of the electric motor on the dairy farm and the various electrical appliances for household comfort.

Our Electrical Demonstration Car started its first tour at Chico, in the Sacramento Valley, on April 16th. The undertaking was planned and the exhibit constructed under the direction of the Commercial Department of our company, and the car is now being shown in every city and town and practically at every station between Chico and Sacramento.

The exhibits are arranged in booths, lengthwise on one side of the car and in front of them is a railing before which the visitors pass to view the display. Although the university train with agricultural exhibits and the private demonstration car of one nature or another may not be particularly new, yet so far as the writer can ascertain, this is the first purely electrical demonstration car that has ever been constructed and operated to show the diversified uses of "Electricity on the Farm."

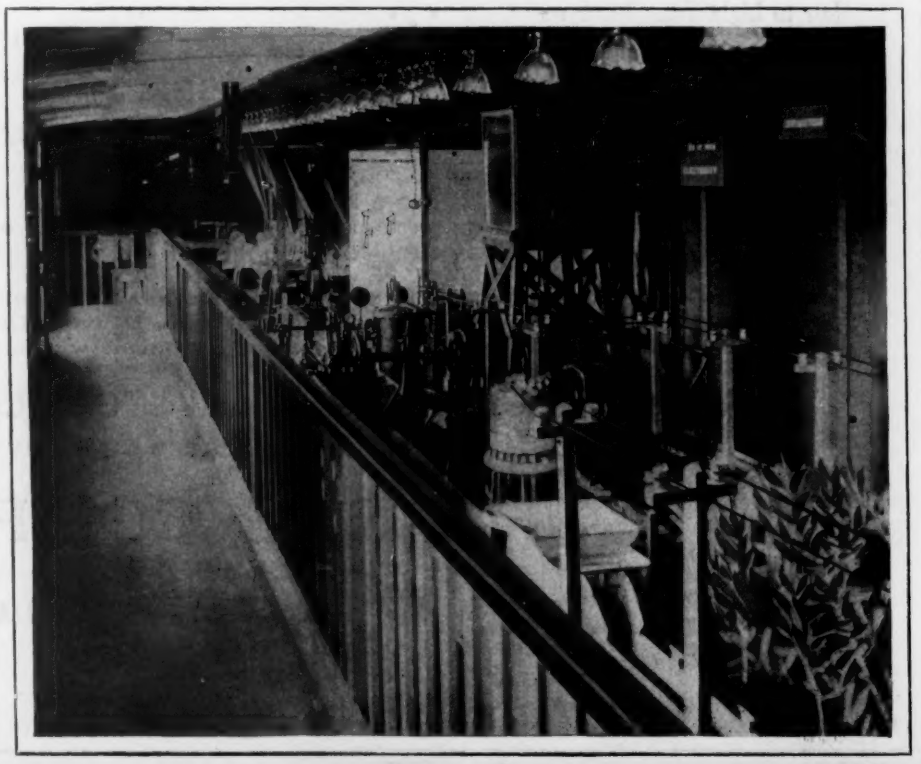
The car is of the baggage car type, the outside painted Northern Electric yellow, the golden yellow of the California poppy. It is lettered in aluminum and is identified by the monograms at each end as shown in cut at the head of this article. Portable steps with hand rails afford easy entrance and exit. Behind the railing where the exhibits are arranged, the car is entirely covered with a dark brown burlap. The burlap is run vertically and the joining edges covered with small batons, which foot on a baseboard, all stained in color to match. This simulates the Mission finish of interior decoration and serves the purpose of concealing some 1,500 feet of wire and conduit utilized in running electric circuits and connections to operate the several devices. Partitions of burlap mark off the different booths. In front of the booths overhead and running the entire length of the car is a row of Mazda 25-watt incandescent lamps with Holophane reflectors. The bank of lights fronting each booth is under separate control and turned on or off with pendant snap switches.

There is a main switch board at one end of the car to control the different circuits. The current when town service is available is brought in from the outside and tapped on to this board. Where this is not possible a small belted generator-set is installed in one end of the car as an auxiliary. The direct current is then taken from the trolley wire and transformed to 110 volts single-phase which is better adapted to all the purposes.

Nearly half the car is devoted to the subject of irrigation and the use of electric power in pumping. A miniature orchard is laid out with furrows running lengthwise through several rows of trees, the furrows being fed from a main ditch in which gates are inserted to control the water in feeding the furrows. A model Hill-Tripp deep-well pump, motor vertical and direct connected, pumps the water for irrigating the orchard. Water is carried in a concealed tank underneath the table on which this exhibit is arranged and after being pumped to the ditch and flowing through the orchard is collected again in a blind ditch and conducted back to the original supply tank.

A small 1-inch centrifugal pump with motor direct connected, also pumps water to a combination stilling box and weir, thence to a main ditch and through an "alfalfa field" which by ridges is divided into checks as is usual in the flooding method of irrigation.

These miniature fields are laid out in a long, shallow galvanized iron pan on a long table. The pan is filled with a mixture of fine sand and cement, and moistened as in laying concrete. A small mesh wire is



*Reprinted in part from the house organ of the Pacific Gas and Electric Company.

imbedded in the mixture for re-enforcement that the cement may be laid as thin as possible to diminish the weight and still be not too fragile. The furrows and checks are then moulded in the concrete with the proper fall so as to give sufficient flow to the water. The surface of the orchard is painted to represent soil and the alfalfa field is painted green to make it more realistic as well as rendering the surface of the cement impervious to the water flowing over it. A small rail fence between the two fields, a model pump house, and a miniature transmission line serve to complete the representation.

In one corner of the alfalfa field is a small motor and belt-driven centrifugal pump which supplies an elevated tank with water to show the operation of the float switch and illustrate the automatic control of pumping water as applied to house service. The front of the tank is of plate glass that the action of the float may be plainly visible.

The next booth contains a small ice and refrigerating machine. This is the smallest ice machine made and is a home product manufactured by the Pacific Refrigerating Machine Company in Alameda. It has but one-sixth of a ton refrigerating capacity and is ideal for the farm or dairy as well as for many other private uses. The machine itself is exceedingly simple, reliable, and inexpensive, requiring but a 1-2 horsepower motor to operate the pump. A 25-pound cake of ice is frozen in from about ten to twelve hours. At the same time the ammonia coils in the refrigerator box hold the atmosphere in there at the required low temperature for refrigeration. The attractive design and finish of the box with the perfect running little machine keeping the exposed pipes frosted makes an attractive exhibit.

In this booth also is displayed a small motor-driven De Laval cream separator and also a motor driving a line shaft which in turn drives a small emery wheel and grindstone, all of which is illustrative of the many ways the electric motor may be utilized on the farm. Placards hung here and there refer to the possibility of similarly applying the electric motor to operate feed-cutters, grinders, churns, etc., that can not be displayed for lack of space.

The rest of the car is devoted to the household. In the model kitchen is exhibited the electric cooking range, tea kettle, small hot plate, and a small motor for polishing silver and grinding the kitchen butcher knife. An electric fan is operated here. The next booth represents the dining room. On a small dining table is placed the chafing dish, percolator, samovar, toaster, and small hot plate. An electric cigar-lighter, that the men of the house may not be neglected, rests to one side on the mantel.

The dining room is heated by a tubular air-heater. The booth representing the bedroom contains the electric hair dryer massage vibrator, curling iron heater, heating pad, and nursing bottle warmer. Here the radiant heat and cheerful glow of the luminous radiator furnishes warmth if desired. Lastly, in the general utility booth is exhibited the washing machine, sewing machine with motor attached, vacuum cleaner, and electric flatiron. Another electric fan here keeps you cool.

The tables are covered with suitable table cloths and the floor of the household end of the car is carpeted in brown, the kitchen having brown linoleum; all of which carries out the general color scheme pleasing to the eye and to withstand wear.

Thus the exhibit is made as complete as

BENJAMIN
TWO-LIGHT
PLUG CLUSTER

For Doubling the Capacity of Your Sockets Without Extra Wiring

It just screws in—and the work is done. You have one light, but want two. Or you want to run an extra wire to another point for connecting some electrical appliance — fan, heater, curling-iron, flatiron, chafing dish, etc., and still keep your light burning. *You need not rewire the place to do it.*

Benjamin Plug Cluster Does the Work of Two Sockets.

For sale by all Electrical Dealers

BENJAMIN ELECTRIC MFG. COMPANY

120-128 So. Sangamon St.
CHICAGO

Peerless
Sign Transformers

You cannot buy better at any price

They are right all the time

THE ENTERPRISE ELECTRIC CO.
WARREN, OHIO

"Best Transformers for all Purposes."

Western-Electric

STURTEVANT
Portable and Stationary

Vacuum Cleaners

are new-business getters for the Central Station

Our nation-wide advertising campaign is making these the best known vacuum cleaners on the market.

Their high quality and efficiency make them the best sellers.

Back of the Western Electric Sturtevant Cleaner are the experiences and guarantees of two reputable manufacturers.

Portable Cleaners for residences and small buildings.

Stationary Cleaners for hotels, offices, public buildings, etc.

For agency information write Dept. 6-J, at our nearest house.

WESTERN ELECTRIC COMPANY

Manufacturers of the 6,000,000 "Bell" Telephones

New York	Chicago	Kansas City	San Francisco	Montreal	London
Buffalo	Milwaukee	Oklahoma City	Oakland	Toronto	Berlin
Philadelphia	Pittsburgh	Minneapolis	Los Angeles	Winnipeg	Paris
Boston	Cleveland	St. Paul	Dallas	Calgary	Rome
Richmond	Cincinnati	Denver	Houston	Vancouver	Johannesburg
Atlanta	Indianapolis	Omaha	Seattle	Edmonton	Sydney
Savannah	St. Louis	Salt Lake City	Portland	Antwerp	Tokyo

EQUIPMENT FOR EVERY ELECTRICAL NEED

NELITE

THERE'S a difference between the man who paints his house green because he wants it green, and the man who paints his house green because he has no other color of paint.

Some reflector manufacturers have to recommend a single type or style of reflector because that's all they make. The NELITE man is able to recommend what you ought to have because we make every style or type of lighting glassware—every good type of metal reflector. There's quite a difference between getting what you want and getting what somebody wants to sell you. From us you can get what you want. "If we don't make it we will: if we do make it it's right."

Apologies to the Diamond Tire Ad'-Man.

space will permit. Signs and posters are displayed on the walls of the car; literature descriptive of the different apparatus and appliances exhibited, and pamphlets on irrigation are distributed among those interested. The entire demonstration is made both interesting and instructive. The popularity and success which the project is meeting with are measured well by the good crowds in attendance.

The original idea in undertaking this work was not to secure actual orders for new business, but rather to exhibit, to demonstrate and to educate to the end that the people in the large and rapidly growing rural communities may become interested and enthusiastic in the opportunities for the practical application of modern electric service.

We do know, however, that considerable business has been secured as a direct result from a visit to the car. This with the impression left and the widespread general advertising it has done for us we figure to have well paid us for our efforts.

DOLLAR IDEAS

For Cleaning Stone Work

By W. G. Barlow
Electric Service Company, Matoon, Ill.

The buildings of a great many cities of this country contain more or less stone work, much of it being sand stone. Nothing is more difficult to clean when once dirty from soot and rain.

A common method of cleaning it is to scrub the surface with soap and hot water, or that failing, to employ a sand blast outfit which is quite an expensive process and very inconvenient for retail centers owing to the sand and dust liberated.

A first-class substitute for the sand blast is an ordinary Electric Drill with a steel wire brush used somewhat as a painter stipples, only having rotation, it carries away a slight portion of surface of the stone and leaves a surface less easily dirtied than the original sawn surface. A little practice will give even the ordinary man a wonderful speed in cleaning the softer stones.

HOLOPHANE REALITE

The HOLOPHANE REALITE —A Remarkable Combination of Efficiency and Beauty.

THE Holophane Realite Unit is the most efficient enclosing glassware in the world. That is a strong statement—but true. These Units are particularly desirable for high class stores, hotel lobbies, banks, clubs and similar installations where beauty of equipment and reasonable economy of operation are of equal importance. Data sheets describing the Holophane Realite are ready.

NELITE WORKS OF GENERAL ELECTRIC COMPANY

CLEVELAND OHIO

New York Boston Philadelphia Chicago San Francisco

HOLOPHANE CO,. Ltd., Toronto, Canada

The vacation and hot weather troubles are gone—what have you done to start a fast and profitable campaign for

Peerless Motors?

Both D. C. and A. C. Motors to 1 H. P. inclusive

We make D. C motors to 30 H. P. designed for any class of service

The Peerless Electric Co.
Warren, Ohio

The Boston Show Clock and Tower

A feature of the Boston Electric Show which will remain as a permanent advertisement for the Edison Electric Illuminating Company is the mammoth ornamental clock on Boylston Street, near Massachusetts Avenue. The clock dial is the largest of the kind with a single exception. Its diameter is 35 feet, with 5-foot numerals and a 17-foot minute hand over all.

The clock face is flanked on each side by columns of lamps operated from a "water-full" flasher. At the top of the columns are large urns, and midway in the columns are a pair of mermaids dimly outlined in colored lamps. The word "Edison" is in letters 8 feet high, reading across the sign, and at the bottom is "Light-Power" in 5-foot letters. (Two views of this sign are shown on the front and back covers of this magazine.)

The clock hands are operated by a small motor geared to the clock shaft and controlled by a master clock. Once a minute the master clock closes the circuit of a solenoid and relay switch, connected to the motor, and the minute hand is moved forward one minute, where it rests until the next impulse is received from the master clock. The movement of the hands occupies about 5 seconds but the time-keeping qualities are entirely independent of the speed at which the motor operates or the hands move. The mechanism was designed by Betts & Betts of New York who also furnished the flashers. One of its advantages is that the master clock may be placed in any convenient location, at any distance from the sign, as only a single circuit is required from the master clock to the switch of the operating motor. In the Boston clock the hands weigh nearly half a ton yet they are moved by a *one-twentieth horse power motor*, and will not be affected by wind or ice.

The sign was built by the Federal Sign System (Electric) of Chicago, and the framework constructed by Herbert S. Potter of Boston. It is 54 feet high, and the tie rods are anchored sixteen feet below the roof of the building on which it stands. There are over 6,500 lamps of various sizes used. Carbon and Mazda lamps give a pleasing effect by their slight contrast and the further coloring is secured by the use of Betts & Betts color caps.

Another interesting feature of the Show is the spectacular illumination of the tower on the Mechanics Building. Fifty rows of incandescent lamps run perpendicularly to the peak of the tower, and are connected to a high speed flasher which gives the appearance of the violent whirling of the entire tower. It is most realistic. The same effect is given the 10-foot letters on the Boylston Street side of the building. Here the letters seem to whirl individually. All these flashers are of Betts & Betts type.

A New Business Getter and Load Equalizer For the Central Station

You can fill the dips in your load curves and raise the total current consumption by showing the owners of residences, hotels, clubs, cafes, creameries, daries, butcher and grocery stores, hospitals, etc., how they can cool their refrigerators better, and at half the cost of the old ice method, by means of the Audiffren-Singrun Refrigerating Machine.

This machine has no competitors—it is the only practical, small refrigerating machine on the market for cooling refrigerators or storage boxes, and making ice for cooling drinking water, etc. Any one, or all, of these purposes can be accomplished easily, cheaply and hygienically by the

AUDIFFREN-SINGRUN REFRIGERATING MACHINE

The power required ranges from ½ to 4 horse-power, depending upon the cooling effect or ice-making capacity of the machine. Being small, compact, absolutely safe and highly efficient in operation, it requires no attention except to start and stop it by simply turning a switch, and even this can be arranged to operate automatically by change in temperature.

We will furnish you free illustrated advertising literature for pushing the sale of this machine in your locality. Let us work together on this proposition—you to furnish the current, we to supply the machine.

Ask our nearest House for Catalog No. 50 and full particulars.

H. W. JOHNS-MANVILLE CO.

Albany	Chicago	Detroit	Louisville	New York	San Francisco
Baltimore	Cincinnati	Indianapolis	Milwaukee	Omaha	Seattle
Boston	Cleveland	Kansas City	Minneapolis	Philadelphia	St. Louis
Buffalo	Dallas	Los Angeles	New Orleans	Pittsburgh	Syracuse

For Canada—THE CANADIAN H. W. JOHNS-MANVILLE CO., LIMITED,
Toronto, Montreal, Winnipeg, Vancouver, 1803

OUTDOOR ADVERTISING EVERYWHERE

The O. J. Gude Co., N. Y.

Originators of Spectacular Electric Sign Advertising, and of the "Great White Way," New York City

Owners of Electric Moving Sign U. S. Patent No. 648,677

PATENTS

promptly obtained OR NO FEE. Trade-Marks, Caveats, Copyrights and Labels registered. TWENTY YEARS' PRACTICE. Highest references. Send model, sketch or photo. for free report on patentability. All business confidential. HAND-BOOK FREE. Explains everything. Tells How to Obtain and Sell Patents, What Inventions Will Pay, How to Get a Partner, explains best mechanical movements, and contains 300 other subjects of importance to inventors. *Address,*

H. B. WILLSON & CO. Patent Attorneys
Box 292 Willson Bldg. WASHINGTON, D. C.

RECO FLASHERS HELP

You to Sell Electric Signs

Give signs distinction; put the cost of operation within the reach of the smallest store-keeper.

Result:—More signs on your service!

Adjustable as to effect and speed; furnished complete; easily installed.

Get our new Bulletins.

Reynolds Electric Flasher Mfg. Co.

Largest Manufacturers of Flashers in the World

Also Manufacturers of Billboard Reflectors, Transformers, Time Clocks, Window Displays, etc.

617-631 W. Jackson Blvd., Chicago **1123 Broadway, New York**

SILENT, SAFE AND SURE

WRINGER HAS TWO ROLLS—WILL RUN EITHER WAY AT WILL OF OPERATOR
THIS LEVER CONTROLS THE WRINGER UP WRINGS OUT DOWN WRINGS IN CENTER STOPS
THIS LEVER CONTROLS WASHER PLACED IN CENTER WASHER STOPS MOVED UP OR DOWN WASHER OPERATES AUTOMATICALLY
EDEN
ELECTRIC HOME LAUNDRY

Silent because the enclosed, self-oiling gearing runs so smoothly it can hardly be heard above the purr of the motor.

Safe because there is absolutely no exposed gearing, cogs, cams, belts or other moving parts. Even the inclined shaft is enclosed.

Sure because it operates on the revolving drum principle which has been used in all successful washing machines—large and small. Drum revolves six times in one direction and then automatically reverses.

The Eden Home Laundry Machine Costs the Consumer $85

The New Business Departments of Central Stations will find the "Eden" machine a fool-proof, trouble-free appliance. The satisfactory performance of every machine is guaranteed for five years.

BROKAW-EDEN MANUFACTURING CO.

1117 Olive St.
ST. LOUIS

23d St. and Western Ave.
CHICAGO

Independent Foundry Company

Portland, Oregon

"The Society for Electrical Development"

The committee appointed at the "Co-operation Conference," held last month on Association Island, as reported in the September issue of Electrical Merchandise, held its meeting for organization on October third, under the chairmanship of Mr. Henry L. Doherty.

It was formally decided to incorporate immediately in the name "The Society for Electrical Development," and the papers of incorporation and the constitution and by-laws of the new Society were approved. The next meeting will be held in the Engineering Societies' Building, New York City, October 18th, and at that time it is believed that it will be possible to approve the general plans of the Society and to make definite arrangements for the financing. This action means that this nation-wide movement for the co-ordination of the four branches of the industry is actually under way; the central station, the manufacturer, the jobber, and the contractor are going to work with their combined brains, enthusiasm, and money to "Pass Prosperity 'Round," as the Bull Moosers say.

The plans will include a central bureau for the carrying on of the work, which will be along the lines of advertising and publicity for the education of the public to the greater use of electricity for light, heat, and power, and for mutual education in advertising and selling. Strong endeavor will also be made to improve the present distributing channels and in every way develop the most efficient methods for advancing the interests of the business.

Frank E. Watts a Candidate for Jupiter

Mr. Frank E. Watts, the Jovian Statesman for New York, who so successfully organized the New York City Jovian Luncheon Club which is just beginning its second year, has consented to become a candidate for Eleventh Jupiter, of the Rejuvenated Sons of Jove. The annual convention of the order is held each year at the home city of the reigning Jupiter and New York Jovians are rallying to the support of Mr. Watt's candidacy in hopes that the 1913 meeting may be brought to New York City, where, of course, there is a very large and an enthusiastic membership.

Popular Lectures on Electricity

Mr. T. I. Jones of the Brooklyn Edison Company, is announced as the leading lecturer of a series of popular lecture courses in electricity offered by the Department of Education of the city of New York. These courses are considered by the educational authorities as being of the greatest value in developing popular interest in technical subjects. Mr. Jones' lecture, "Modern Applications of Electricity," is along lines which cannot help but give an exceedingly practical value to the course.

POSITIONS OR MEN WANTED

The rate for "Positions or Men Wanted" advertisements of forty words or less is one dollar an insertion; additional words, one cent each; payable in advance. Remittances and copy should reach this office not later than the 15th of each month for the next succeeding issue.

Replies may be sent in care of Electrical Merchandise, 17 Madison Avenue, New York City.

WANTED—Power salesman having technical and sales experience with ability to close power contracts with large prospective customers. State experience and salary expected. Address, A. B., ELECTRICAL MERCHANDISE, No. 17 Madison Ave., New York City, N. Y.

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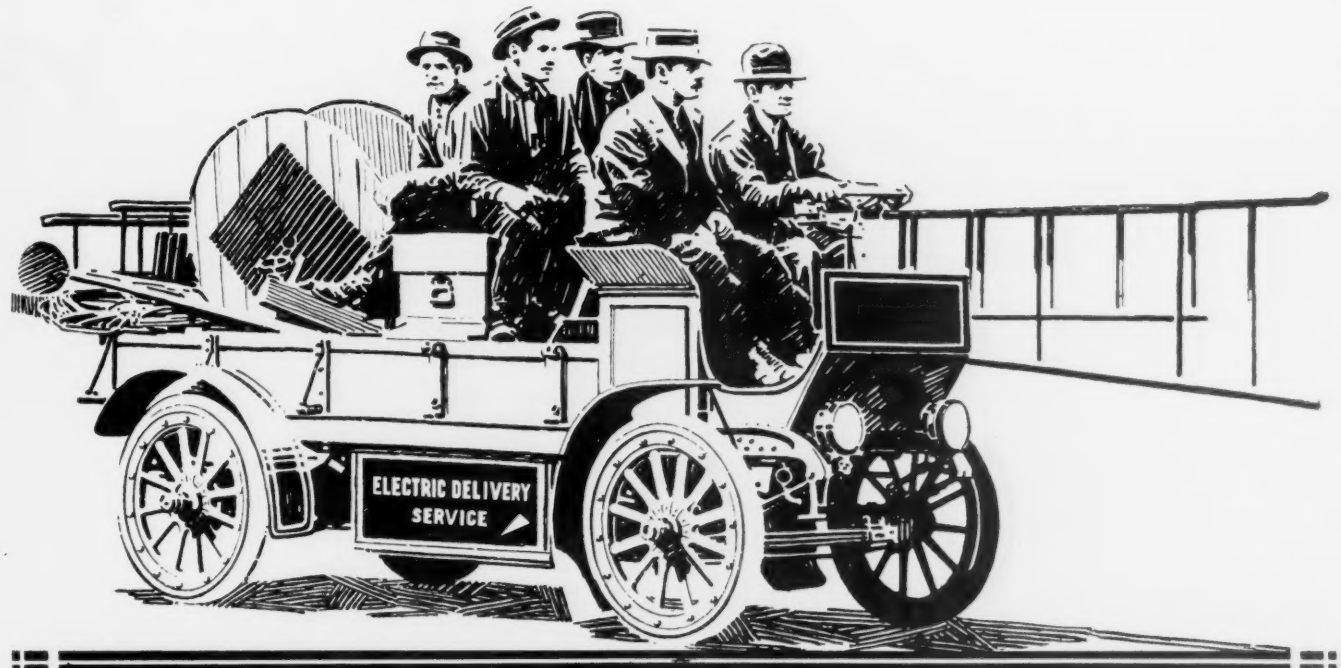


The purchase and use of at least one Electric Vehicle is an important first step in any Central Station campaign.

Your use of Electric Vehicles, Mr. Central Station Manager, is the most compelling endorsement of their economy and efficiency.

How can you expect to convince ***others*** of the desirability of Electric Vehicles if ***you*** are not using them yourself?

In the work of delivering lamps, setting poles, handling line constructions, carrying men to and from jobs remote from the plant, installing meters, inspecting and maintaining street-lighting equipment, reading meters located at scattered points, thawing out frozen pipes and repairing damages to the overhead or underground system, the Electric Vehicle stands ready to render ***greatest*** service at ***least*** expense.

And the records you keep as to mileage, energy consumption, service and cost of operation are invaluable when dealing with prospective customers. This is what the progressive Central Station is doing.

We are conducting a nation-wide advertising campaign for the Electric, both pleasure and commercial, in a great number of national magazines and a long list of trade journals. We want every Central Station in the country to derive the greatest possible amount of individual benefit. We will gladly show you how you can link our national advertising to your local conditions, at little expense. Why not write today?

ELECTRIC VEHICLE ASSOCIATION OF AMERICA

BOSTON NEW YORK, 124 W. 42nd St. CHICAGO

(16)

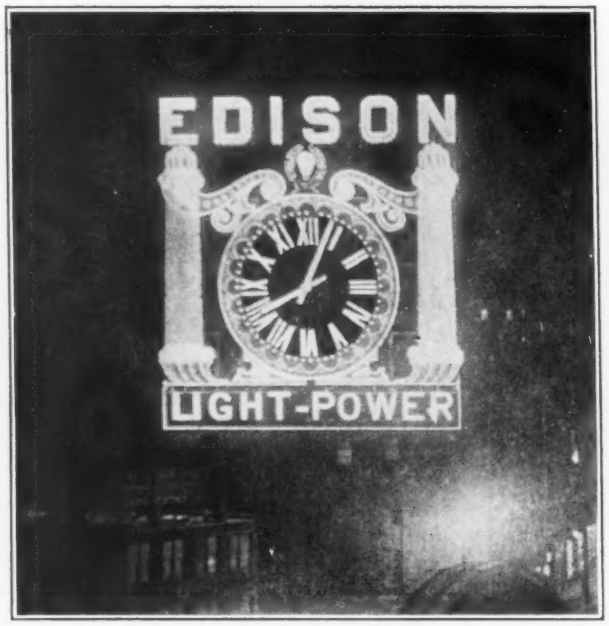
The Largest

(Secondary Control)

Electric Clock in the World

A Brilliant Feature of the 1912 Boston Electric Show

Clock Mechanism designed and built by Betts & Betts

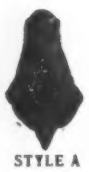


Flashers and Color Caps manufactured by Betts & Betts

All Flashers used inside and outside of the Exposition Building are

BETTS FLASHERS

used by Leading Sign Manufacturers the World Over


STYLE A

BEWARE OF INFRINGING COLOR CAPS.

A detachable spring supported Color Cap has recently appeared upon the market. We claim it infringes upon our letters patent.

The trade is cautioned therefore, to ascertain before buying, if it infringes upon our patents. We are preparing to vigorously protect our rights.

STYLE B

BETTS & BETTS

Largest Manufacturers of Flashers, Electric Clocks and Sign Accessories in the World

254 W. 55TH STREET, NEW YORK, U. S. A.

On the Subway

Code Word, "Bettsonia," W. V. Lieber's and Private Codes Used